A MONOGRAPH
ON
INDIAN RAILWAY RATES

2981

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PREFACE.

The idea of writing a Monograph on Indian Railway Rates originated with the Hon'ble Sir Robert Gillan, the President of the Railway Board, and I took up the work, at his request, and on behalf of the Railway Board, in July 1917.

The scope of the work was limited to the writing of plain statements of facts relating to the history, policy and making of railway rates in India, so as to arrive at a correct understanding of the past history and of the present position. This is the object with which the book has been written and, therefore, any suggestions as to what action should be taken has, as far as possible, been avoided. It will now be for the Government, the Railways and the public to study the whole thing and to discuss and take action, where necessary, when normal conditions again prevail.

The publications of the Government of India, especially those of the Railway, Commerce and Industry, Geological Survey, Agricultural and Revenue, and Statistical Departments, Mr. K. L. Dutt's Report on the Enquiry into Rise of Prices in India, and the records of the Railway Board have been most useful, and quotations from them have been frequently given.

My grateful thanks are due to all, whose publications I have used, and I only hope that this work will be of use to the public, to the trade and to the Railways, as it was in the interests of all of them that the Government of India, Railway Department, ordered this work to be taken in hand.

The time occupied in actual writing of this book was from July 1917 to January 1918, and the rates are those from tariffs that were published up to October 1917, and the traffic statistics in Part II relate to 1911 and 1912 generally, as those were fairly good average years, and the figures are for normal periods before the war.

It is not claimed that the work is perfect, and it is admitted that there may be errors and short-comings and some of the conclusions may not be sound, but I can say that my earnest endeavour has been to discuss each case from all its phases and to bring out facts impartially.

My sincere thanks are due to the Hon'ble Sir Robert Gillan, who gave me every encouragement in connection with this work, and whenever I needed his advice and instructions they were readily given, and they were of great help. He also indicated to me the lines on which the book was to be written, and at the same time he impressed upon me the necessity for stating plain statements of facts.

I am also grateful to the Hon'ble Mr. C. E. Low, C.I.E., Secretary to the Government of India in the Department of Commerce and Industry.

His advice and suggestions were very useful in connection with Part II of the book.

Mr. G. C. Godfrey, Member, Railway Board, kindly went through the whole book, and his suggestions especially in connection with the chapter on economics of transportation were indeed very valuable.

My thanks are also due to Messrs. Bigg-Wither and Cooper of the Burma and the Assam Bengal Railways respectively for examining the chapters on the rates of these two lines.

Mr. Purceil, Superintendent of Rates, East Indian Railway, gave me some useful hints.

I am also indebted to Mr. C. V. Bliss, the late Secretary of t[illegible] Indian Railway Conference Association and now General Traffi[illegible] Manager of Railways in Mesopotamia, for the Note on Simplification of Goods Tariffs—Appendix III.

Lastly, I am thankful to my two assistants Messrs. G. C. Chatterjee and S. C. Bose for their able assistance; but for their help the work would not have been finished in so short a time. Mr. Chatterjee's work in connection with the rates that have been quoted in the monograph was particularly helpful.

S. C. GHOSE.

SIMLA,

April, 1918.

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PART I

GENERAL REMARKS.

Business of Railways.

THE business of a railway is the conveyance of persons or goods from one place to another, and in selling transportation, a railway has to take into consideration its own interests as well as those of its customers. A railway must take into account the interests of the community as a whole, and every one cannot, therefore, always get the rate he wants.

A railway can only serve its constituents best, so long as it earns sufficient to pay all its operating expenses, including upkeep and maintenance, and a reasonable return on the capital outlay. A railway generally fixes rates which pay best and attract as much business to the railway as it can carry. A railway, like any other business concern, is always trying to add to its revenue by increasing its traffic; but as a railway shareholder does not expect as high a dividend as an investor in any other industrial or commercial concern, a railway is expected to spend and does spend money on improvement of facilities whenever it is found necessary to meet the requirements of expanding traffic or to attract fresh traffic. It is the aim of a railway to reach the widest class in the sale of its commodity of transportation and it must therefore fix its charges for carriage of passengers and goods on the principle of "what the traffic will bear."

Definition of the term "what the traffic will bear."

No better explanation of the term "what the traffic will bear" can be given than is found in the chapter on "Goods Rates" in Hugh Munro Ross' book on British Railways. The explanation given by him is as follows:—

"One way the obvious but short sighted and ineffectual way of doing this is to charge the highest possible rates and be content with the limited amount of business that can struggle to exist in such conditions: that is the principle of charging what traffic will not bear. The other way recognises that a small profit, many times repeated, is better than a large one obtained only occasionally, and that a large business affords greater opportunities of gain than a small and restricted one. Hence it means that a railway accommodates its charges to the circumstances of the traffic and encourages new customers and new traffic by moderate rates and liberal treatment. This is the ideal pointed to by the principle of charging what the traffic will bear."

Passenger classes and fares.

In India, the passenger traffic is divided into 4 classes, and the fares generally are as follows:—

1st class	18 pies per mile.
2nd class	9 "
Intermediate	4½ "
3rd class	3 pies to 1½ pies per mile

The great bulk of the railway passenger traffic is carried in third class and the fare charged is between 3 pies and 1½ pies per mile.

Goods classes and rates.

The goods traffic is divided into six classes and the following are the maximum and minimum rates allowed by the Government for each class between which the railways can vary their rates :—

	* PIES PER MAUND PER MILE.	
	Maximum.	Minimum.
1st class	$\frac{1}{3}$	$\frac{1}{10}$
2nd „	$\frac{1}{2}$	$\frac{1}{6}$
3rd „	$\frac{2}{3}$	$\frac{1}{6}$
4th „	$\frac{5}{6}$	$\frac{1}{6}$
5th „	1	$\frac{1}{6}$
X class (Explosives, including dangerous goods)	1½	$\frac{1}{6}$

(The rates for coal are, however, cheaper and will be found in subsequent Chapters.)

Agricultural productions, mineral articles and cheap goods are grouped under the lowest or 1st class, and the ordinary rate for this class is $\frac{1}{3}$rd pie per maund per mile or 9 pies per ton mile. The second class contains manufactured articles in their first stage and articles in every day use, such as piece goods, brassware, copperware, etc., and also higher priced agricultural productions such as cotton. The higher priced articles of merchandise which are carried by railways in small quantities, bulky articles requiring more space in wagons, fragile goods which are attended with risk of damage or breakage during transit, valuable articles, such as silks, etc., and dangerous goods requiring special handling and transport are all placed in higher classes : in fact, the rates charged on commodities increase with the increase in prices of goods and generally the quantity carried also becomes less.

But the largest proportion of the railway business is done in goods of the cheapest class, consisting of agricultural productions and minerals for which special rates lower than the maximum are charged. The difference between the ordinary and the special rates is that while the former represents the maximum rate of the class to which the goods pertain the latter is lower than the maximum but within the minimum.

As already stated, the chief consideration in the fixing of special rates is to attract as much traffic as possible to a railway and as the volume of traffic increases in weight and the distance hauled over a railway becomes greater the rate per mile becomes less, for any additional traffic brought to the railway and carried in wagon loads for long distances means distribution of operating expenses over a greater distance and between a larger number of unit miles, and therefore, it is considered, it pays the railways to encourage such traffic.

Factors in determining rates.

Competition is one of the important factors in determining rates ; competition may be between—

(1) Railways ;

(2) Railways and river transport ;

*** (*N. B.*—A pie is equivalent to $\frac{1}{12}$th of a penny ; a pound (£1) represents Rs. 15 fifteen, a rupee is made up of 16 annas or 16*d*, and 12 pies make one anna.)**

(3) Railways and land transport (carts, pack animals);
(4) Ports;
(5) Places of supplies; and also
(6) Industries.

Competition between railways not infrequently includes competition between ports and competition between places of supply and between industries.

The question of cost of carriage has to be taken into account in determining the competition limit, and in India minimum rates have been fixed below which a railway cannot reduce its charges in competition, and this limit in the case of 1st class goods, which constitute great bulk of the traffic, is determined by the factor of the average cost of haulage of the railways, taking the railways of India as a whole, because the Government is practically the owner of all the important trunk lines of the country and is responsible to see that in competition between railways, one railway does not force down its own rates or the rates of another line to non-paying figures. In the case of one or two lines, however, the minimum fixed by the Government may not be the bottom limit of its power to give the lowest rate; but as the Government ownership extends to all the important lines, if an uniformity in respect of bottom limit is not maintained for the sake of one or two railways, the tendency will be to force down the rates to the bottom limit on many railways in competition with such lines as can charge lower than the general bottom limit rates, which cannot be to the interests of the state.

The question of rates charged on goods carried by Indian railways has, during recent years, attracted the attention of the public, and this subject was discussed at great length in the Imperial Legislative Council in 1912 and in 1915.

Railway rates constitute an important factor in the trade and commerce of a country, and divergent opinions prevail in every country, where there are railways, on the point as to whether railways are doing all that should be done in the matter of manipulation of rates in the best interests of the people.

Railways useful in times of stress.

The "Enquiry into the Rise of Prices in India" has disclosed the fact that the Indian railways have, in times of stress, been very useful in affording relief by importing food stuffs into the affected areas, and that without the railways the results in times of distress in famine stricken districts would have been disastrous. This enquiry has also shewn that the railways have enabled the ryots to dispose of their surplus production at a fair price, thus increasing their income and their purchasing power which is again shewn by the increase in imports, especially in articles, which do not constitute bare necessaries of life. The area under cultivation has generally increased with the advent of railways.

The Indian railways are now in a prosperous condition and their business is advancing and it is held by some that the interests of the railways and of the public are allied together. In one of the latest publications on "Railroad Transportation," by a well known writer *on Railway Economics, it has been remarked :—*

> *"A railway cannot possibly prosper unless the people also prosper. A railway cannot charge a higher rate than the production can afford to pay and a railway cannot afford to be hostile to the interests of a community."*

Early railway policy.

The Railway policy in India has been regulated from the very start by the Government enunciating the broad principles from time to time, it being recognised by the Government and made known to the railway administrations that the railways should be so managed and the rates and fares so regulated as to offer the people the greatest possible benefit of railway transportation. But at the same time, it has also been admitted by the Government that the utility of the railways can only be fully enjoyed by the public and the railway mileage in India go on increasing if the railways are paying concerns and are self-supporting. Therefore, such rates, as are not considered to be compatible with the interests of a railway, cannot benefit the people in the long run, for if the earning power of a railway is reduced, naturally its power of affording facilities to the public will also be restricted.

A railway while benefiting the country generally, benefits the area lying within its sphere in particular, and, therefore, it is believed that it is by the endeavour of each railway to serve the interests of the districts and of the community it is directly concerned in, that the whole country can be best served by the entire railway system.

It is true, multiplication of agencies for the working of the trunk lines has not been considered desirable from many points of view, and it is, therefore, that amalgamations of several railways have taken place and branch lines belonging to separate companies are sometimes worked by main lines. But at the same time, it is in order to protect the individual interests of various provinces, which differ in many respects, and to allow them to develop their resources independently or in co-operation with the neighbouring districts and provinces, that the trunk railways of India, although belonging to the State and amalgamated in several cases for purposes of economy and to assist the natural flow and distribution of traffic and also for political reasons, are allowed to be managed as best as they can be in their own individual interests and, in the interests of the area they serve in particular.

Necessity for this publication.

In India, the Government is practically the owner of all the important trunk lines and it is considered by them that the time has come when it is necessary to bring about clearly the relations between the Government and the railways in the matter of rates quotations and the policy adopted in regard to rates control ; but before proceeding to do so, it may not be out of place to say a few words about the effect of the railways and of railway rates on the income of the peasantry, who constitute the great bulk of the Indian population. It will, therefore, be useful to quote following extracts from the "Report of the Enquiry into the Rise of Prices in India," published in 1915, as they bear on this point very directly.

Effect of railways on the condition of the ryots.

"The advent of the railway has been of special advantage to the peasantry. In all the large productive tracts, the introduction of railways is usually followed by the substitution of central markets, where the producers are brought face to face with dealers and brokers. and are no longer dominated by the village shop-keeper, who would take over the crop from the cultivator at his own valuation, which is not often that of the market at which he himself disposes of it. The villager is thus brought into touch with the outer world; he learns the ways of trade and reaps the profit of bountiful harvests."

"Before railways were constructed the cultivator derived little benefit from an abundant harvest. His markets were confined to a small area, and if the supply were greater than the demand, as it would be in a good year, prices fell and he lost the profits from the larger yields and sometimes found it economical to leave part of his crop uncut. Railways have altered these conditions. They have rendered possible the transfer of supplies from the areas of plenty to areas of scarcity."

* * * * * * *

Reductions in rates in 20 years ending 1912-13, and enhancement since 1916.

"It has already been explained that statistics of railway freights for selected articles and for selected leads on the principal railways have been compiled and are published with the statistics appended to this report. A glance at this statement will show how very large the reduction in freight has been; in the case of coal and tea, being as much as 40 per cent., while in the case of jute, jute manufactures and sugar it has been 27 to 31 per cent. The smallest reduction has been in grains and pulses and raw cotton, but here also it has amounted to 20 per cent."

It may be necessary to explain why in comparison with the reductions in railway rates for other commodities the reductions in charges for grain and cotton have been less; this is due to the fact that the railway rates for grain were from the commencement fixed on a low basis, and in the case of raw cotton it was found, on special enquiry made some years ago on behalf of the Great Indian Peninsula Railway, which carries by far the largest amount of traffic in cotton, that the rates of that railway were not such as prevented expansion of the area under cotton cultivation or the expansion in trade in cotton, and it was considered advisable to maintain the somewhat comparatively high rates for cotton in order to maintain the railway earnings.

Since, however, the issue of the report of the Prices Enquiry Committee in 1915 there have been enhancements in rates.

It may, therefore, be explained that the large reductions in railway rates, especially at the junctions and stations adjacent to them, made *during the last 20 years, were in many cases not exactly called for by the trade. They were due to competition between railways. The period of keen competition is over,* and the area to be served by various railways and routes is now more or less defined. Competition, however, enabled the railways to find what areas come within the sphere of each railway, route or port, and it has also been ascertained what rates the traffic can bear and what rates are required to develop the resources of the country. Therefore, competition has done a great deal.

It was, however, thought necessary in later years to examine the whole position in regard to rates both in areas that were out of the sphere of competition and in those that were at one time affected by competition, in order to avoid the unnecessary loss of revenue due to the low rates no longer necessary. The matter was investigated and it was found that in some cases with relatively high rates from non-competitive areas the traffic was as large, if not larger, as compared with that from the competitive areas with low rates, which, while constituting undue preference in some cases, also meant loss of revenue to the railways, and hence rates were enhanced, especially to and from the ports, with effect from 1st October 1916.

Reasons for the rates in America being brought down.

A statement was made a few years ago that the Indian railway rates though lower than those in European countries were not so low as those in America. Competition between the railways in America forced down the rates which at one time ceased to be paying ones, and the railways there had to devise means to reduce the cost of transportation to be able to maintain the low rates brought about by competition. Eventually such rates were found to be remunerative, from the fact that with the increased traffic and improved methods of transportation, the net earnings, after deduction of working expenses, paid a reasonable return on the capital of the railways. But it should not be forgotten that the capital of many American lines had been written down very considerably, during the period of their bankruptcy, (the result of reckless and undesirable competition both in making railways and in the rates charged), as there was no chance of regaining such capital. Therefore, how far the reduced rates would have been paying rates on the total money spent on each railway, *i.e.*, including large sums that were written off, is extremely doubtful.

The extent to which competition was carried on in America was described to be as follows in the report of an American Railway Commission published in July 1882 :—

" We have found in the course of our investigations that a species of competition has prevailed from time to time which has brought satisfaction to few persons, if any, and which has resulted in inequalities and disorders greatly detrimental to trade. Such competition

exists when the railroad companies or those who are permitted to solicit business and to make contracts on their behalf, set out with the determination to withdraw freights from their rivals, and secure them for themselves, at all hazards, and regardless of gain or loss; and when acting upon this determination they throw to the winds all settled rates, and in the desperate strife for business offer any inducement in their power which will secure it. The country not long since had experience of such a season, and everywhere we listened to complaints of the injury which legitimate business suffered from it. It was said by parties interested in transportation that the inauguration of such a strife put an end for the time to all possibility of calculating from day to day what would be the cost of carriage, and what could be safely paid or wisely accepted for grain, provisions, or other articles, destined to another market by rail. The control of railroad rates, and, to a large extent, of all railroad business, then passed out of the hands of the legitimate and regular corporate managers into the hands of solicitors for fast freight lines and other agents, who made from day to day and from hour to hour such terms with those having business as would secure it, but generally made secret terms—that the bargain with one man might not prevent their driving a better bargain with another, as they might find opportunity. Under such circumstances persons were favoured and localities were favoured, when the object to be immediately accomplished seemed to require it—regardless of the just maxims of legitimate business, and of the rules of the common law, which enjoin upon common carriers that they shall deal with all customers upon principles of equity and relative fairness."

No wonder therefore that the American railway rates were forced down to very low figures, but Indian railways have been fortunately free from such a state of affairs as described above.

Difference between Indian traffic conditions and those of the United Kingdom and the United States.

The English and American railways are bound by certain statutory maxima rates and fares beyond which they cannot charge, the object of this limit being fixed is to protect the public from the levy of unreasonable rates by the railways. But the railways are more or less free to vary their rates, according to the requirements of their traffic, to their best advantage, and naturally they strive to obtain the greatest possible profit for their lines by manipulation of such rates as bring them all the traffic they can carry and at the same time give them a good profit. The Government also exercises control over the railway rates and fares by certain laws and regulations which are referred to in the chapter on "Government Control of Railways in the matter of railway rates and fares."

In England and in America, railways are private concerns and the Government have no financial interest in them; and the traffic conditions in both countries are different to those in India.

For instance, in England, not including Scotland, it was said in 1906, that there were 8,900 railway stations in the country and 70 ports. The ports, in addition to being available for entrance of foreign merchandise, " were used for the distribution of local merchandise throughout the country, traffic being brought to ports by agency of railways and then taken from port to port " and also to the interior by water in competition with railways and " the stronger justification for lower carriage and for differential rates was water competition than anything else." These conditions are not general in India.

The original idea of the Government with every new railway in India was to align it so as to tap and develop new areas of railless tracts rather than encourage competitive lines merely for the sake of competition. But with the extension of railway mileage in India, although gradual and rather slow, the new lines met one another as well as the older lines at both near and distant points and the new lines became intermediaries for traffic between points on distant railways.

Thus the conditions in India became gradually altered and the railway rates and charges had to be regulated from time to time to meet altered conditions. The natural flow of the traffic, principally in raw productions, has been in the past, from the interior to the ports, and this kind of traffic has constituted the bulk of the railway business.

But there has been an awakening of interest in India in developing its manufactures and industries to make the best use of raw productions of the country and it will be to the interests of the railways in the long run to co-operate in the development of such industries.

The trade conditions in India are also peculiar to its own and are different almost in each province and sometimes differ even in neighbouring districts.

It is not always that goods for export out of India are consigned to the ports for immediate transfer from railway wagons into ships. No small amount of grain and seeds traffic carried to Howrah (Calcutta) in the first intance is eventually exported from the Calcutta port, although Khidderpore Docks are open for goods intended for direct shipment. In the same way, grain and seeds are also consigned to Bombay and are stored and cleaned there in some cases and then exported.

The agriculturist or producer in India is not concerned with the ultimate destination of his goods; his interest ceases when he has disposed them of at the nearest market. The financing traders, in certain cases, principally in grain, pulses, seeds, cotton, etc., have sometimes almost direct influence as to the port the traffic should go to, and this important factor cannot easily be ignored.

It is true that big shipping firms have their agencies at principal buying centres, but in recent years the exporting firms have found it more convenient to buy at the ports and the Indian dealers, specially in Bombay, export in some cases on their own account.

In the case of the Calcutta port, the financing is done by Marwaris who either buy on their own account or act as commission agents on behalf of merchants up-country, and therefore on trade *viâ* this port, the incidental expenses are greater than in the case of despatches *viâ* Bombay.

The Hindu and Mahomedan merchants of Guzerat, known respectively as Bhatias and Borhas, constitute the great majority of Indian traders in Bombay and the latter have their own buying agencies at almost every important place on the Great Indian Peninsula, the Bengal Nagpur, the Southern Mahratta, the Bombay, Baroda and Central India and the Kathiawar Railways. By this system of buying direct, they avoid commission agency charges. From each centre of such direct agencies of "Borha" merchants they send out petty agents to buy even at small places and to despatch direct from each station.

Dealing now with the conditions of markets in the interior, it is noted that they also differ considerably; for instance in Muttra in the United Provinces one of the big "shop-keepers fixes the prices at which he can sell, and the brokers carry his rate round to other shops; it is not necessary that the other dealers should sell at the same rate too but they do so with slight variations." But this is not the general rule. In many places the agriculturists bring grain for sale without previous arrangement, and the buyers watch their arrivals and then fix their rates. Thus the daily variation in prices in small markets is at times considerable.

Next to deal with the conditions under which the Indian railways deal with their traffic. Excepting coal, which is principally from the coal fields of Bengal and manganese ore from the mines in Central Provinces, both the outward and inward traffic of Indian railways is distributed between so many small stations. Although the railways of Northern India are able to send their export traffic in grain, pulses and seeds, cotton, etc., in comparatively large loads, a large amount of traffic of the railways of Southern India is done in small lots. Taking India as a whole, even wagon load traffic has to be collected from station to station, and wagons have also to be distributed in a similar manner. The percentage of small stations is large, and most stations cannot always give at a time more than one wagon load of 300 to 400 maunds and there is, therefore, the difficulty of using wagons of high capacity in large numbers in India to their best advantage on all lines. Thus also, the cost of operation in India has a tendency to be high in spite of the fact that the labour is relatively cheap as compared with that employed on American and on European railways.

It is also to be borne in mind that in India, the cost of railway materials including rolling stock and machinery and stores is naturally greater than in those countries, especially in iron and steel goods, as a great deal of these has yet to be imported from Europe.

With these explanations of the difference in the conditions between India and other countries where there are railways, it will be realised that the wholesale application of European and American conditions cannot be suitable to India, but at the same time the experience gained in railway working in those countries has been of great use to India and has avoided the repetition of mistakes in the case of railway rates policy. The evil effects of monopoly or of reckless competition have been avoided.

In discussing the railway rates one cannot entirely overlook the subject of financing of Indian railways.

Financial aspect of Indian Railways.

The trunk lines in India were originally financed by capitalists in England, on generally 5 per cent. guarantee from the Secretary of State for India and for a number of years some of the railways did not pay their guaranteed interest and the deficit had to be made good out of the revenues of India. But gradually the railways became self-supporting concerns and are to-day valuable assets to the Government.

The surplus of net Government revenue from State owned lines after payment of working expenses, interest on capital outlay, interest on debt incurred for purchase of railways, and annuities in purchase of railways were as follows for the years 1909-10 to 1913-14 :—

	Rs.
1909-10	2,50,42,747
1910-11	1,33,70,633
1911-12	7,03,79,776
1912-13	8,60,81,975
1913-14	8,55,85,694

The main trunk lines of India now belong to the State although majority of them are yet leased to companies for purposes of working.

Except in the case of the Oudh and Rohilkhand Railway, the South Indian Railway, and one or two other small lines, which were purchased by cash payments, only part of the capital of each railway, as it was acquired by the State, was paid off at the time of purchase and for this part payment and for the whole payment made for one or two lines, money had to be raised by the Government on loan.

In terms of the original contract, the purchase value of a railway represented generally the par value of the share capital *plus* 20 per cent., and this commuted amount became the capital of the railway, after it was acquired, for which the Government became liable. Payment in redemption of the balance of the commuted capital was arranged in annuities, which are being paid off yearly in certain fixed sums from the revenues of railways *plus* interest on annuities.

After a railway is acquired by the State, the Government of India takes entire control of expenditure even if the said railway is leased to a company for working and further capital is provided either—

(1) out of the general revenues of the Government; or

(2) by raising of capital by the Government in rupee loan in India; or

(3) by issue of debentures by the Secretary of State in England; or

(4) by issue of debentures by companies in England on the guarantee of the Secretary of State.

The Railway Company to whom a railway is leased for working, is required to have a nominal capital in the undertaking in shares or in deferred annuities.

In the interests of the development of the trade and resources of India it was recommended by the McKay Committee of 1907-08, that the capital expenditure on Indian railways should be fixed at 12½ millions sterling per annum. This sum was accepted as reasonable expenditure on railways in India but conditions of the money market both in India and in England prevented this amount being spent even in days before the war. An annual expenditure of 8 millions was however arranged for before the war. This amount of 8 millions did not include capital raised in India by Branch Line Companies. The 8 millions represented the capital expenditure for which the Government of India were directly liable. Over and above this amount there is the capital provided by Indian Branch Line Companies for new lines in respect of which the Government and the main lines to which the branches are feeders are liable only for the interest guaranteed.

At the end of the year 1915-16, the total amount of the capital of the State lines leased to companies for working was £365,813,347 of which actual State outlay was £180,530,775 and the balance was made up principally as follows :—

£68,772,691	net outstanding remaining to be paid off to original investors in annuities.
£51,259,000	amount of outstanding debt, yet to be paid, incurred by the Government in connection with the purchase of railways.
£44,550,948	Debentures and Debenture Stock raised in England.
£18,061,829	Company's share of the nominal capital.
£2,500,000	Advances of capital by Secretary of State in England to Companies.
£475,651	Advances to Companies made in India.

With such large sums outstanding on account of capital, which is the debt of the Government of India to be paid out of the revenues of the railways, a certain amount of caution in the matter of general reduction of rates is necessary, although in particular cases when a railway finds that it is lacking in business and that it has facilities to carry additional traffic, reductions to meet such conditions are fully justified, especially when it is known that the reduced rates and fares will increase the volume of business by extending the demand or the markets of consumption or by reduction in prices at places where owing to high freight, business has been hitherto impossible or restricted.

But when railway facilities are unable to cope with the existing traffic and further facilities can only be given slowly, due to circumstances over which a Railway Company has no control, reduction in rates only result in reduction of earnings thus increasing the cost of the railway for the same amount of traffic to be carried at reduced rates. Such a course, if continued for any length of time, must affect the power of the railway in carrying traffic at reasonable rates. It will, however, always pay the railways to be on the look out for traffic in the direction in which the wagons are returning empty—for such traffic, while requirng no additional facilities and very little extra expenditure, will bring n more money. But in such cases also, if it means mere transfer of raffic from one railway to another, it cannot be to the best interests of ndia or of its Government, as the owner of Indian railways.

There are times when enhancements of rates are also called for. ome have termed enhancements in rates *taxation*, but when the railway xpenses go up and there cannot be an increase in traffic unless large ums are spent on renewals or extension of facilities to meet requireents of the present or anticipated increase in traffic the raising of rates is justified especially when funds and materials are not available to pay for extended facilities.

Quotation of rates as demanded by circumstances in various cases.

In a country like India, where large tracts yet remain to be provided with railways and where money has to be found, for extensions to main lines and in improving their facilities, either out of grants from the general revenues of India, demands on which for various kinds of public expenditure are great, or out of borrowed capital (on which interest has to be paid out of the railway revenue), and where main lines are finally responsible for the payment of deficit of the guaranteed interest to branches, financed out of funds raised by private enterprise in India, the public should at times be prepared for enhancement of rates or fares to meet temporary stress under exceptional conditions When, however, normal conditions return reductions can again be thought of, if it is found that the expansion of India's resources and their development need reduced rates.

When a new industry or trade can be developed, which will in the long run benefit the country and consequently the railways serving it, and it is found that it requires a fostering rate in its early stage it is always good for the railways to encourage a new or a struggling industry by such reasonable rates as circumstances require. But at the same time if the law is made rigid that charge for long hauls should not be greater than for short hauls or if the railways know that a reduction at one point to meet a really deserving case will force down rates at other points, where traffic can well bear the existing rates, they will hesitate to make reductions.

Almost similar remarks apply to equal mileage rates, the evils of which (if rigidly adopted in preference to rates on the basis of "what the traffic will bear") were summarised as follows by the

Select Committee of July 1882, on railway rates and fares in England :—

"(*a*) It would prevent Railway Companies from lowering their rates and fares, so as to compete with traffic by sea, by canal, or by a shorter or otherwise cheaper railway, and would thus deprive the public of the benefit of competition, and the company of a legitimate source of profit.

"(*b*) It would prevent Railway Companies from making perfectly fair arrangements for carrying at a lower rate than usual goods brought in larger and constant quantities......

"(*c*) It would compel a company to carry for the same rate over a line which has been very expensive in construction, or which, from gradients or otherwise, is very expensive in working, at the same rate at which it carries over less expensive lines.

"In short, to impose equal mileage rates on the companies would be to deprive the public of the benefit of much of the competition which now exists, or has existed, to raise the charges on the public in many cases where the companies now find it to their interest to lower them, and to perpetuate monopolies in carriage, trade, and manufacture in favour of those rates and places which are nearest or least expensive, where the varying charges of the companies now create competition. And it will be found that the supporters of equal mileage rates when pressed, often really mean, not that the rates they pay themselves are too high, but that the rates that others pay are too low.

"Pressed by these difficulties, the proposers of equal mileage rates have admitted that there must be numerous exceptions, *e.g.*, where there is water competition. (*i.e.*, at about three-fifths of the railway stations of the United Kingdom), where low rates for long distances will bring a profit, or where the article carried at low rates is necessary, such as coal. It is scarcely necessary to observe that such exceptions as these, whilst inadequate to meet all the various cases, destroy the value of 'equal mileage' as a principle, or the possibility of applying it as a general rule."

It may, however, be pointed out that some of the above arguments do not apply against equal mileage rates in India with same force as in England owing to difference in conditions, such as extensive water competition, which exists in England but not very largely in India.

Having so far related the general factors, which underlie the principles of rates making, we shall now in the subsequent chapters deal with the various phases of the question of railway rates affecting this country including the history of railway developments bearing on railway rates and of competition and combination, etc.

CHAPTER I

EARLY HISTORY AND GOVERNMENT POLICY IN THE MATTER OF RAILWAY RATES AND FARES.

Contracts between the late East India company and the early guaranteed lines.

The history of the rates and fares of Indian Railways commences from the time the railways came to be projected in this country. It was at the outset agreed to between the Railway Companies and the Government (the East India Company) that the fares and rates were, in the first instance, to be fixed with the approval of the Government, and alterations in them could only be made with the concurrence of the same authority. In the event of the net profits of a Railway exceeding 10 per cent. on the capital outlay, the Government could order that the rates and fares should be reduced, but not to such an extent as to bring the net receipts below 10 per cent. upon the capital expended. The clause in the contract with the first railways was as follows. (This is a quotation from the contract of the late East India Company with the Madras Railway Company, dated 22nd December 1852).

"The said Railway Company shall be authorised and empowered to charge such fares for the carriage of passengers and goods, and such tolls for the use of the said railway as shall have been approved by the East India Company, and shall not in any case charge any higher or different fares or tolls whatsoever without such approval being first obtained; but such fares and tolls shall, when such net receipts as are hereinafter mentioned shall in any year have exceeded 10 per cent. upon the outlay, be reduced in accordance with any requisition of the East India Company in that behalf, but only with a view of limiting the said fares and tolls so far that the net receipts shall not exceed 10 per cent, as aforesaid."

In the early stage of Indian Railways neither the Government nor the Railway Companies were in a position to determine what rates and fares the trade and the travelling public required in order to confer the full benefit of the railways on them. Necessarily, therefore, the charges for the carriage of passengers and goods were in an experimental condition, but it is interesting to note that in a report in 1859, when the railways could hardly be said to be even in their infancy, it was observed that although there would be the absence of competition on Indian Railways (which in England had been the means of exhausting funds at the outset), owing to railways in India practically serving different territories, the injurious effects of monopoly would be prevented by the power reserved by the Government to regulate proceedings of railway companies and to fix the rates and fares, which again could not be altered without the approval of the Government.

It was considered doubtful, when the railways were proposed for the country, as to whether there would be a large passenger traffic, but no such doubts were entertained as to goods traffic.

There were expectations of exports of food grains and oil seeds from India with the opening of the railways to ports from the interior, but the prospects of a heavy traffic in cotton for shipment were largely calculated upon, as even without the railways, during the ten years ending 1858, eighteen per cent. of the total quantity of cotton imported into the United Kingdom was from India, Bombay alone exporting 135 million pounds out of the total of 146 millions sent from India.

Original rates and fares.

For the three railways that were opened for traffic between 1853 and 1859 the rates and fares were fixed as given in the table below :—

	1853.			1854-55.			1856-57.			1858-59.		
							Rate per passenger mile in pies.					
Passenger.	G. I. P.,	E. I.,	Madras.	G. I. P.,	E. I.,	Madras	G. I. P.,	E. I.,	Madras	G. I. P.,	E. I.,	Madras.
1st Class .	24	..	..	24	24	..	18	24	18	18	18	18
2nd „ .	10	..	..	10	9	..	12	9	9	6	9*	6
3rd „ .	3	..	..	3	3	..	3	3	4	3	3	2
							Rate per ton mile in pies.					
Goods.	G. I. P.,	E. I.,	Madras.	G. I. P.,	E. I.,	Madras	G. I. P.,	E. I.,	Madras	G. I. P.,	E. I.,	Madras.
1st Class .	10	..	..	10	9*	..	No change		6¾	No change		8
2nd „ .	14	..	..	14	13½	..			13½			10
3rd „ .	18	..	..	18	18	..			20¼			12
4th „ .	20	..	..	20	27	..						
5th „ .	30	..	..	30	54	..						

* Coal at 7 pies per ton over East Indian Railway.

On the East Indian and the Great Indian Peninsula Railways the goods were divided into five classes, 1st, 2nd, 3rd, 4th and 5th, the lowest rate being charged for the 1st class and the highest for the 5th class, but the reverse was the case in the case of passengers, the 1st class passengers paying the highest fare and the third class the lowest.

Why the Madras Railway confined its goods rates to three classes and did not follow the example of the other two lines is not known, but it is supposed that for a less prosperous area, which the Madras Railway served, they thought that the third class rate was the highest they could charge, and the third class included also the 4th and 5th class goods of the other two lines. The goods classification was simple and did not exceed a page of foolscap in print, and the division was as follows :—

The 1st Class—comprised of mineral goods, manures, firewood, salt, timber, pig iron, iron bar, returned empties, etc.

The 2nd Class—consisted of a large number of commodities amongst which were agricultural productions (such as grain, oil seeds, cotton, jute, chillies); and other articles of general consumption, *e.g.*, Jagree (Gur), sugar, cocoanuts, betelnuts, flour, ghee, earthenware, gunny, hides, oil cake, saltpetre, iron and steel articles, and twist (either cotton or woollen), came under this class as well.

In the third Class there were—wines and spirits, stores and provisions, groceries, hardware, tobacco, turmeric, silk raw, machinery, vegetables.

The articles in the 4th Class were—books, cutlery, glass and glassware, medicines, perfumery, tea, tarpaulins and manufactured silk.

And the 5th Class—consisted of goods, which are now-a-days known as "Excepted articles," such as gold, silver, jewellery, etc.

"Piece goods," which form an important item of railway traffic now-a-days, did not occur in the list of articles mentioned in the goods classification.

Interpretation of the powers of the Government in the matter of railway rates under the old contracts.

As early as in 1859, a dispute arose between the Madras Railway Company and the Government as to the powers of the Government, after having once sanctioned the rates, to alter them without any initiation on the part of the railway company. It was also disputed whether any alteration could be made in the rates without the sanction of the Board of Directors. The Secretary of State for India, in his Despatch No. 119, dated 24th November 1859, passed the following decisions on these points:—

"With regard to the power of the Government to alter the rates, in the absence of any request to that effect from the Railway Company, I apprehend that under the contract, it is intended that when once the rates and fares have been definitely settled and approved by Government, the proposals for any alteration should be initiated by the railway company. In the present instance, however, it may be urged that the rates in force were made experimentally, with the view of ascertaining, by actual experience, those which were most suited to the circumstances of the country, and that none had been finally approved by the Government......... It should be understood, however, that when once the rates have been definitely fixed they cannot be altered, except at the request of the company, until the profits realised amount to ten per cent. But while this is the legal state of the case, there should be no difficulty, practically, in carrying out any measures by mutual consent which experience may show to be to the advantage of the undertaking. I quite agree in the opinion of the late Court of Directors that these are matters which are better decided in India than in this country."

By the middle of 1861, 1,028 miles of railway were opened for traffic, viz. :—

	Miles.
East Indian Railway	376
Great Indian Peninsula Railway	356
Madras Railway	206
Bombay, Baroda and Central India Railway	90
TOTAL	1,028

Railway mileage in 1861 and the rates and fares then in force.

The railways were attracting a fair amount of traffic, both in passengers and goods, but it was felt that the goods rates of the Great Indian Peninsula Railway were not low enough for the area that railway served, because notwithstanding the facilities of transit offered by rail, the amount of goods carried by country carts by roads running along the railway, over considerable distances, particularly in the Deccan, was large, and therefore, in 1861, rates lower than the class rates were granted to attract this traffic to the railway, with appreciable results.

It will be observed from the table of rates given previously, that of the three lines the charges of the Madras Railway were fixed on a lower basis, and it was remarked by the Directors of that line in 1861 that the "low fares, judiciously fixed, were drawing traffic from the old roads to the rail road."

In the beginning of the year 1862, taking the lines that were open for traffic, the following were the highest and lowest fares in force on them :—

—	PASSENGER FARES PER MILE			GOODS RATES PER TON PER MILE.				
	1st class	2nd class	3rd class	1st class.	2nd class.	3rd class.	4th class	5th class.
	Pies.	Pies.	Pies.	Pies	Pies	Pies.	Pies.	Pies.
Highest	18	9	3	9	13½	18	30	54
Lowest	8	4	1⅜	8	10	13	13	30

Railways open for public traffic in 1863.

The year 1863 started with the lengths of the railways available for carriage of public traffic as follows :—

The East Indian Railway	Howrah to Chunar. Allahabad to Hathras. Burdwan to Raneeganj.
The Great Indian Peninsula Railway	Bombay to Bhusaval. Bhusaval to Malkapur, on the Nagpur branch. Bombay to Sholapur in the south.
The Bombay, Baroda and Central India Railway	Daman Road, 125 miles north of Bombay to Ahmedabad.
The Madras Railway	Madras to Beypore, e.g., from the Coromandel coast to the Malabar coast.
The Great Southern Railway of India	Trichinopoly to Cauvery.
The Eastern Bengal Railway	Calcutta to Poradah.
The Calcutta South Eastern Railway	Calcutta to Canning.
The Scinde Railway	Karachi to Kotri.
The Punjab and Delhi Railway	Amritsar to Lahore.

It was noticed in 1864 that there was an increase in the earnings with a falling off in the traffic, and it was observed by the Government Director of Indian Railway Companies in England that "possibly the rates might have been fixed too high, and that more traffic might have been taken at a less profit per passenger or ton of goods and yet so as to produce greater aggregate profits," and for the first time, in the history of Indian Railways, the Government of India expressed their anxiety in the interests of the traders and the travelling public, and in a report to the Secretary of State for India they said that "it was the duty of the Government to see that the public were protected by taking care that a moderate scale of maximum rates was established while the actual arrangement, within that scale, might with advantage be left to the Railway Managers."

Views of the Government of India in 1864 in the matter of protecting the interests of the public; and rates and fares in 1865.

In 1865, the rates for carriage of passengers and goods on Indian Railways were as shown in the statement appended below :—

RAILWAYS	PASSENGER PER MILE				GOODS PER TON PER MILE				
	1st class	2nd class	3rd class	4th class.	1st class	2nd class	3rd class.	4th class.	5th class.
	As p	As p	As p	As p	As. p	As p	As p	As p	As p
East Indian .	1 0	0 6	0 4	0 3	0 9*.	1 0	1 4	2 4	4 8
Great Indian Peninsula	1 2⅘	0 8	0 3	.	0 9	1 1	1 6	2 4	4 8
Madras . .	1 0	0 5	0 2½		{0 8 0 10}	1 4	1 6	2 2	
Bombay and Baroda.	1 2¾	0 8	0 4	..	0 8	0 10	1 4	1 8	
Scinde . .	0 10	0 6	0 3		0 10	1 2	2 4		.
Punjab . .	1 0	0 8	0 3		0 8	1 0	1 5¼	2 2	..
Eastern Bengal	1 0	0 6	0 4	0 3	0 10	1 0	1 4	2 4	4 8
Calcutta and South Eastern	1 0	0 6	0 4	0 3	.	.	.	.	..
Great Southern	1 0	0 8	0 2			..	..		..

* Coal 7 pies.

This statement shows that the cheapest lowest class passenger fare was that in force on the Great Southern Railway, *viz.*, 2 pies, whereas on the other lines it varied between 2½ and 4 pies; in the case of goods rates 8 to 10 pies per ton per mile were charged for the lowest class of goods. The present maximum for the lowest class of goods is 9 pies per ton per mile or ⅛ pie per maund per mile.

About the year 1865, it seems it was alleged by some in England on behalf of the companies, that the Government in exercising control over railway rates in India might think fit to require the adoption of such a scale of charges as would bring the railway within the compass of as much people as possible, without considering the effects of too low a scale upon the receipts or profits. The Government of India declined that any such idea had ever been entertained. The policy of the Government was summed up in the following words:—"The people in India are now taxed to pay the guaranteed interest. For their protection the Government exercises a control over the railway companies, with the twofold object of securing such a system of good management as shall provide all the legitimate advantages of railway communication for the country at large, as well as such profits as shall release the Government from payment of the guaranteed interest; and in the second place, of affording the best means of encouraging capital and enterprise in India by affording an example of success in works which have been undertaken. .... It must not be thought, however, that high profits and high fares are synonymous; on the contrary, low fares, that is to say low, compared with those in Europe, are perfectly compatible with large remunerative receipts."

The following table shows the fares for a hundred miles journey on the various Indian lines of 1864 as well as the charges for the same distance on some of the English Railways, for the third class passengers :—

For 100 miles.

	3rd class fares.	
	s.	*d.*
Indian Railways—		
East Indian	3	1
Great Indian Peninsula	2	8½
Madras	2	10½
Bombay, Baroda and Central India	4	2
Eastern Bengal State	3	1½
Great Southern of India	2	3½
Scinde	3	8
English Railways—		
Great Northern	8	4
London and Dover	8	4
Great Eastern	12	6
Brighton	8	4
London and North Western	8	4
Great Western	8	5

Comparison of passenger fares for the lowest class between English and Indian lines in 1864 and a few remarks on the subject of passenger traffic and fares on Indian Railways.

How far any such comparison is useful it is difficult to say, because some hold the view that any comparison of this nature is not of much use, for the conditions in the two countries are not alike. It is said that the fares for the lowest class of passengers should be determined, regard being had to the travelling power of the mass, which in India consists of the agricultural classes and labourers. The former travel for long distances only when on pilgrimages and for short distances on business, whereas the labourers travel both short and long distances in search of employment; in some cases the railway fare is borne by the employers and in others paid by the labourers themselves. It was held that what the great majority of the population can afford to pay in railway fares in England or in America is higher than what the same class can pay in India, and a comparison was made in 1903, showing that while for one day's wages an unskilled labourer could travel sixty miles in America, the same class of inhabitant in India could not travel for more than fourteen miles on one day's wages. It may not be out of place to also point out that in some cases it is not on what a man earns a day, but on what he actually saves, depends his spending power on travelling. Therefore, in any such comparison of fares, the factors to be taken into consideration are many; some of which are (*a*) the wages and savings of the people, (*b*) the necessities for travelling, (*c*) the expenses of the railways in carrying passengers, (*d*) habits of the people in the matter of migration.

According to the report of the "Rise of Prices Enquiry Committee" (1915) "the wages of every class of wage-earners in India have risen in rural and urban areas much more rapidly than the retail prices, and the rise has been greatest in rural areas where the wages of both agricultural labourers and village artisans have risen enormously as measured by their purchasing power of commodities," and "Railway transportation" is one of the commodities of which the agricultural labourers are purchasers. It will be matter for consideration for the future, when the railway fares are being reconsidered after the war, whether the travelling power of this class of inhabitants has increased or decreased.

Railways in 1866 and temporary increases in railway rates due to traffic increasing in advance of railway facilities to carry it.

Now to revert to the history of railway expansion and railway rates—In 1866, the East Indian Railway was completed from Howrah to the left bank of the river Jumna, opposite Delhi. The Punjab Delhi Railway was open from Amritsar to Multan, the Scinde Railway from Karachi to Kotri, and a Steamer Service, called the Indus Flotilla, was maintained between Multan and Kotri over the Indus for purposes of through traffic between the Punjab Delhi and the Scinde Railways. The Bombay, Baroda and Central India Railway Company had completed the length from Bombay to Ahmedabad, and the Great Indian Peninsula Railway had extended its line to Berars and was within easy reach of the great cotton mart of Amraoti. The Madras Railway in addition to its length from Madras to Beypur had built a branch from Jalarpet to Bangalore. By the middle of the year 1866 the open mileage of railways was 3,332 and it is interesting to note that even in the sixties the demand for the conveyance of goods on Indian Railways had become so great that the resources of some of the railway companies were found inadequate to meet the same. Owing to more traffic offering itself than what the railways could carry, there was at this time a tendency on the part of the railways to enhance the fares. This attitude of the railways puzzled the Government and they gave this matter a great deal of attention, and in a report to the Secretary of State for India in Council, the Government Director of Indian Railway Companies, on whom, in those days, fell the task of furnishing an annual report on Indian Railways to the Secretary of State to be presented to both Houses of Parliament, wrote as follows:—

"If the traffic goes on increasing in the same ratio as in the last two years, the rates will, in some cases, have to be raised higher than they are now, in order to realise the profits which the railways could command. Considering the question in the abstract, the first point to be ascertained, before fixing charges of this kind, is the cost of conveyance, and then the charge, which, in addition to what is required to cover the cost, will produce the greatest aggregate return ; for it should be borne in mind that it is not the high profit per unit, but the small profits upon the large numbers of quantity which should be sought for. Supposing the cost of running a train, which should carry 50 tons, to be three shillings a mile, and only 25 tons are carried at 3 pence a mile, the profit is only 3 shillings 3 pence or 1½ pence per ton ; but supposing the charge be 2 pence, and 50 tons are carried, the profit is 5 shillings 4 pence or 1¼ pence per ton. Thus, when the profits for each ton are more, the aggregate results are less, because the amount conveyed is insufficient to fill the wagon. When the amount is increased by the lower charge, the profit is smaller per each ton but (more being carried at the same cost) the profits are greater on the whole. The great aim should be, in the first place, to provide an adequate supply of rolling stock, and then to impose such rates as would bring that stock into constant use. An over supply and an under supply are to be avoided. Both have a tendency to raise rates. If too many carriages and trucks are provided, charges must be put on to cover the cost of those unemployed. If too few trucks are provided charges would have to be imposed to check the demand of conveyance."

No further action was suggested beyond recording these views, but, on the other hand, the Government seems to have accepted the situation that " as the Great Indian Peninsula and the East Indian Railways were unable to meet the demands upon them by supplying carriages and trucks for the traffic offered to them, the high rates levied by them at the time ought to be, under these circumstances, considered exceptional." It is not known, however, whether any attempt was made by these two railways to borrow rolling stock from other lines to meet the increased traffic, but about this time all the railways in India were more or less busy. As to the suggestion in the remarks quoted above that the first aim should be to get an adequate supply of rolling stock, it is at times difficult to say what that adequate supply of rolling stock is. It is seen on some Railways that a supply of a large number of wagons did not enable them to move quickly all the traffic offering. In many cases, no additional stock would be necessary if facilities in the way of additional tracks, passing sidings, crossing stations, reduced lengths of block sections, marshalling and sorting yards, etc., and extended terminal facilities were provided, to enable the trains and wagons to get through quicker so as to attain better results in the matter of quick turning round of stock. It has been seen that during recent years, with the increase in the number of wagons and engines, the work done by each individual wagon or engine has become less. This point has been dealt with in greater detail in the chapter on " Economics of Transportation" and in Appendix thereto. It is also to be observed that the power of the Railways in getting more work out of wagons, is sometimes reduced, owing to removal of goods by consignees, at terminals, not keeping pace with the arrivals.

In any case, as already pointed out, the enhancement in rates by the Great Indian Peninsula and East Indian Railways in 1865-66 were accepted as exceptional. It was about this time that the Great Indian Peninsula Railway raised the classification of cotton from the 2nd class to 4th class, and this had the effect of appreciably increasing the receipts without injuring the traffic.

The tendency on the part of the Railway Companies to charge high rates, led to the discussion as to the future method of control by the Government, not only in the interests of the public, but to avoid the high rates becoming the means of restricting the growth of railway business.

Maximum rates fixed by the Government for various railways in 1868 and the issue of a circular defining the railway policy of the Government at the time.

In 1868, maximum rates were fixed for the various railways by the Local Governments under instructions from the Secretary of State, because the Secretary of State* did not think that the Supreme Government in India should interfere in such matters, as practically each railway served its own territory and had local conditions, and therefore, each Government, within its own Presidency, was competent to fix the rates and fares for each line, and it was considered by him that the only case in which the Government of India should keep a control was in the matter of general policy. But at the same time it was noted by the Secretary of State that the Government of India had also kept the control of rates for food grains and coal and fares for the lowest class of passengers and no objection was raised to this exception. Practically, the lines were allowed to retain their existing rates and fares and the maximum rates and fares were as follows :—

Railways.	Fares per passenger per mile.				
	1st class.	2nd class.	Inter class.	3rd class.	4th class.
	Pies.	Pies.	Pies.	Pies.	Pies.
Madras	18	5	..	3	..
Great Southern	18	5	..	3	..
Great Indian Peninsula	24	12	..	8	3
Bombay, Baroda and Central India	24	12	..	8	4
Scinde	24	12	..	8	4
East Indian	18	9	4½	3	..
Eastern Bengal	18	9	4½	3	..
Calcutta and South Eastern	18	9	..	3	..
Punjab	18	9	..	2½	..
Delhi	18	9	..	2½	..
Oudh and Rohilkhand	18	9	..	2	..

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* Despatch No. 17 of 29th February 1868 from the Secretary of State to Government of India.

RAILWAYS.	1st class.	2nd class.	3rd class.	4th class.	5th class.	Food grains.	Coal.
			Rate per ton per mile.				
	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
Madras	12	14	16	24	36	..	..
Great Southern	12	14	16	24	36	..	..
Great Indian Peninsula	12	18	24	36	54	12	10
Bombay, Baroda and Central India	12	18	24	36	54	12	10
Scinde	12	18	24	36	54	12	10
			Rate per maund per mile.				
	Pie.	Pie	Pie.	Pie.	Pies.	Pie.	Pie.
East Indian	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	1	2	$\frac{1}{3}$	$\frac{1}{3}$
Eastern Bengal	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	1	2	$\frac{1}{3}$	$\frac{1}{3}$
Calcutta and South Eastern	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	1	2	$\frac{1}{3}$	$\frac{1}{3}$
Punjab	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	1	2	$\frac{1}{3}$	$\frac{1}{3}$
Delhi	$\frac{1}{3}$	$\frac{1}{2}$	..	1	..	$\frac{1}{4}$	$\frac{1}{4}$

The Government of India Circular letter, dated Simla, the 16th October 1868, was to the following effect :—

"The Secretary of State having recently decided in favour of a system of maximum fares and rates for Indian Railways, the Governor General in Council has had under their consideration the question as to the extent to which the Government of India should take part in these, and how far it should leave the matter to the control of the Local Governments.

"It appears to the Governor General in Council that in affairs of this sort, the Government of India should only so far interfere as may be necessary to fix a general policy on the part of the Government, and to regulate matters by which a railway company working within the territories of one Local Government may affect a railway company working within the territories of another Local Government. Beyond this the Government of India would wish to leave the subject of maximum fares and rates entirely to Local Governments. The only policy of the Government, as regards the fixing of rates and fares on railways, should be to make them as generally useful to the mass of the people as is consistent with due profits to the companies. The powers of the Government, under the contracts, are limited to the approval of increases of fares and rates after they have once been fixed, and to the fixing of fares and rates on first opening of railways. It is clear that it can never be proper to insist on any fare or rate that should not afford a reasonable profit with ordinarily filled trains ; and that there are only a few cases in which the Government should interfere with the freedom of the companies to act according to their judgment on the ordinary system of the trial of the relations of supply and demand. After very careful consideration, His

Excellency in Council has come to the conclusion that only the following matters should at present be retained in the hands of the Government of India :—

(1) The fares for the lowest class of passengers.
(2) The rate for food grains.
(3) The rate for coal."

A controversy arose between the Government of India and the Secretary of State on the point as to whether the railways were interested in charging maximum rates for minimum of traffic or minimum of rates for maximum of traffic. While the Secretary of State held that it was as much to the interests of the Government as of the Railway Companies to get the maximum of passengers with the minimum of profit, the Government of India pointed out that it did not appear to them "to be the interest of the Railway Companies to carry the maximum of passengers with the minimum of profit, but on the contrary, minimum of passengers with maximum of profit and that it would be profitable for them to carry two million passengers at 3 pies instead of three millions of passengers at 2 pies, whereas the interest of the Government acting on behalf of the public was directly opposite to it." At the same time, however, the Government of India admitted that it would not be to the interests of the railways to so raise their fares as to create a drop in the passenger receipts, thus reducing the chances of maximum of profit. What the Secretary of State apparently meant was that the railway companies were interested in attracting to their lines maximum number of passengers they could carry and that, therefore, they would not charge a higher rate than what would bring the traffic to the railway, or in other words, they would not levy a higher rate than the figure which would bring maximum of passengers which the railways could carry.

In 1868, the railway mileage sanctioned for construction was 5,600, of which 3,942 were open for traffic ; and dealing with the question of further development, the Secretary of State held the view that competing lines ought not to be promoted, as will be seen from the following extracts from Despatch No. 3 (Railway), dated the 16th of January 1868, from the Secretary of State to the Government of India :—

Division of railway projects between two classes, viz., political and Commercial

"9. It seems desirable that projects for future railways should be arranged in two separate classes, as commercial or political. It may often be difficult to distinguish clearly between the two, but this need not be attempted. It will be sufficient that some should be recognised as being recommended chiefly by commercial, and others chiefly by political utility."

"10. . . . . .

"11. Of the commercial lines, those should, in my opinion, be preferred, which will open up the districts, whose natural resources are at once largest and least developed, and which are least aided by existing lines. Competing lines ought not to be promoted, but care should be taken to scrutinize the grounds upon which any line is said to be in competition with another. As regards feeders, it is to be hoped that the several companies will not refuse to undertake such, as both they and the Government may concur in regarding them as desirable."

About this time the Directors of the Indian railway companies in England represented to the Secretary of State about the provision of roads from railway stations to the interior, and the Government of India recognised the importance of this, and a system of roads as feeders to each line was approved by the Government, but it is feared that for want of funds even to this day the Local Governments and the District Boards have not been able to provide sufficient roads in this direction. Nevertheless the railways changed the character of the roads and are responsible for the increase in the number of roads in India, as will be proved by the following remarks in the Imperial Gazetteer (Indian Empire, Volume III, published in 1908):—

"The construction of railways began to have a considerable influence on the functions and characters of new roads. With the extension of railways it became more and more necessary to build roads in a direction which would enable them to feed rather than compete with the newer means of communication; and a great demand for metalled roads was aroused. ...."

State lines projected to give low rates to public.

During this period State lines were projected, and the policy of the Government of India was to give the public the benefit of low rates; these lines were intended to be built cheaply, the idea being to "commence on a most economical scale and to make improvements gradually as the traffic justified fresh outlay and called for greater conveniences."

Opening of the Suez canal in 1869 and the junction between the East Indian and the Great Indian Peninsula railways at Jubbulpur in 1870 and the railway rates and fares at the time, as well as traffic and operative Statistics for 1870 and 1871-72 respectively.

A great stimulus was given to the trade of India by the opening of the Suez Canal in 1869 and it is estimated that the value of the exports and imports of India in that year was 89 crores of rupees as compared with 32 crores, the value of the foreign trade of India in 1851-52, *i.e.*, before the advent of railways.

In the year 1870, a still further encouragement was afforded to the foreign trade, as in that year one of the most important events in the history of Indian railways took place: the Great Indian Peninsula Railway was linked up with the East Indian Railway at Jubbulpur, and the through communication was opened for public traffic on 7th March 1870 by the late Duke of Edinburgh, and thus Bombay and Calcutta, and Bombay and Delhi and Lahore were brought into railway communication with one another.

It was considered by the Government at this time that there should be unrestricted interchange of traffic between all the lines opened, and that, although the circumstances of each railway might and did differ, there was much that was common to all, and that as far as possible uniformity should be maintained, "both as regards system of management and rates of charge ...."

Although unrestricted interchange of traffic was arranged generally between the open lines, and a special meeting was held between the

Directors of the East Indian and the Great Indian Peninsula Railways in order to attain free interchange of traffic *viâ* Jubbulpur, uniformity in the matter of rates for charge did not come in for a long time afterwards.

In 1870, the rates and fares on the various lines were as given below. Salt and grain were charged the lowest rates, and on some railways coal, grain and salt came under the head of "Special" class.

RAILWAY.	PER PASSENGER PER MILE				GOODS PER TON PER MILE						
	1st class.	2nd class.	3rd class	4th class.	1st class	2nd class	3rd class.	4th class	5th class	6th class	Special
	As. p.	As. p	As p.	As. p	As p	As. p	As p.	As p	As p	As. p	
East Indian .	1 6	0 9	0 3		0 8	1 2	1 6	1 10	2 4	..	7 pies for distance over 300 miles.
Great Indian Peninsula.	1 6	0 9	0 4	0 2½	0 8	0 10	1 2	1 3	2 0	4 8	
Madras . .	1 6	0 6	0 3		0 8	1 0	1 2	1 6	2 0	4 0	
Bombay, Baroda and Central India	1 3	0 7	0 3	.	0 8	0 10	1 2	1 8	2 4	3 4	
Scinde and Punjab.	1 6	0 9	0 2½	..	.	..	..	..	..	..	
Great Southern of India.	1 6	0 5	0 3	..	..	..	..	..	..	..	
Eastern Bengal	1 6	0 9	0 4½	0 3	0 8	1 2	1 6	2 4	4 8	..	As. p. 0 6
Oudh and Rohilkhand.	1 6	0 9	0 4½	0 3	0 10	1 2	1 6	2 4	4 8	..	0 7

It will not be out of place also to give some idea of the traffic that was being carried on the various Indian Railways at the time the rates

RAILWAYS.	No. of miles open Total.	PASSENGER TRAFFIC.		GOODS	
		Total.	Third class.	(1) No. of tons of coal and coke.	(2) No. of tons of other minerals.
Guaranteed.					
East Indian—					
(Main Line)	1,131	5,136,606	4,473,736	269,486	15,262
(Jubbulpur Line)	224	215,723	185,914	390	..
Great Indian Peninsula	1,258	3,326,024	1,592,547	2,240	429,874
Madras	783	2,105,566	1,774,866	709	40,368
Bombay, Baroda and Central India.	312	2,555,848	2,432,097	5,396	11,368
Scinde, Punjab and Delhi.	666	1,971,409	1,919,888	282	1,458
Great Southern of India.	168	783,755	771,921	..	610
Eastern Bengal	113	1,324,907	293,149	14,625	5,044
Oudh and **R**ohilkhand	42	354,292	343,184	..	477
Carnatic	19	79,772	74,299	..	10
State.					
Calcutta and South-**Eastern.**	28	287,477	282,250	556	688
Khamgaon	8	10,531	8,985	..	..
Unguaranteed.					
Nulhatee	28	72,949	67,385	3,069	3,295

and fares given in the preceding table were in operation. The following are the figures of traffic :—

TRAFFIC.					
(3) No. of tons of merchandise other than minerals.	Total of (1), (2) and (3).	Total receipts from goods traffic.	Total receipts from passenger traffic.	Total receipts from all sources of traffic.	Traffic receipts per train mile.
		Rs.	Rs.	Rs.	Rs.
885,909	1,170,657	1,84,07,280	62,46,720	2,56,32,380	4·22
69,057	69,447	5,59,760	4,87,140	11,88,220	2·64
540,465	972,579	1,19,86,290	38,15,510	1,63,29,050	4·49
303,042	344,119	28,69,120	16,12,260	47,40,240	3·175
244,796	261,560	29,40,680	16,85,590	48,36,460	5·175
279,040	280,780	23,20,600	15,62,220	41,46,490	3·905
70,809	71,419	3,03,170	3,72,630	6,96,350	2·925
171,500	191,169	10,52,940	6,50,680	17,58,470	4·82
26,860	27,337	60,710	1,43,310	2,24,000	3·75
2,855	2,865	4,090	30,140	34,630	1·245
21,434	22,678	19,930	48,410	70,430	1·8
11,463	11,463	7,880	1,910	10,130	3·425
6,457	12,821	25,840	49,660	85,360	3·99

A year afterwards, an analysis was prepared of the results of the traffic and of traffic working, particularly in connection with the gross rates and fares earned, the profits derived therefrom and the cost of working each unit of goods and passenger traffic. And it was considered that such figures would go to illustrate the effect of the rates and fares on traffic receipts and expenditure of the railways. Only the important lines were taken into account in the analysis given below :—

The remarks of the Government Consulting Engineer in, London on the results attained by the railways are very interesting, and have, therefore, been also reproduced here, as they give a very clear idea of the whole position at the time. The figures are for 1871-72.

Passenger Traffic.

—	EAST INDIAN.		G. I. P.	Madras.	Bombay and Baroda.
	Main line	Jubbulpur branch			
Miles open.	1281	223¾	1274	832	349½
1. Average receipts from each passenger train per mile.	Rs. 3-4-4	Rs 2-11-4	Rs. 2-14-0	Rs. 3-0-0	Rs. 4 8-6
2. Average charge for carrying a passenger (taking all classes together) one mile.	3·04 pies	3·12 pies	3·52 pies	3·024 pies	3·24 pies
3. Average number in any passenger train at any one time.	206	106	157	190	268
4. Average cost of running a train one mile	Rs. 1-13-6	Rs 2-0-8	Rs. 2-12-8	Rs. 1-6-4	Rs 3-7-4
5. Average cost of carrying a passenger one mile.	1·72 pies	2·36 pies	3·416 pies	1·808 pies	2·48 pies
6. Average profit on each passenger per mile.	1·32 pies	·76 pies	·104 pies	1·616 pies	·76 pies
7. Average number of passenger trains running over each mile of line, each way, per diem (supposing all trains to be through trains).	2·14	1·43	1·7	1·15	1·5
8. Average number of passengers passing over each line, both ways, per diem.	882	472	534	437	804

Goods Traffic.

Miles open.	1281	223¾	1274	832	349½
1. Average receipts from each goods train per mile.	Rs 5-10-8	Rs. 3-4-0	Rs. 4-9-4	Rs. 3-0-8	Rs. 5-2-0
2. Average charge for carrying one ton of goods (taking all classes together) one mile.	As. 0-9·92	As. 0-9·2	As 1-0·72	As. 0-11·6	As. 1-0
3. Average load (in tons) in any goods train at one time.	109	68	60	50	82
4. Average cost of running a train one mile	Rs. 1-13-6	Rs. 2-0-8	Rs. 2-12-8	Rs. 1-6-4	Rs. 3-7-4
5. Average cost of carrying a ton of goods one mile.	3·248 pies	5·76 pies	7·76 pies	5·36 pies	8 pies
6. Average profit on each ton per mile	6·672 pies	3·44 pies	4·96 pies	6·24 pies	4 pies
7. Average number of goods trains running over each mile, each way, per diem (supposing all trains to be through trains).	2·66	1·13	2·52	1·92	1·54
8. Average number of tons passing over each mile of line both ways, per diem.	580	154	349	192	252

"A high average rate does not necessarily imply higher rates for the same classes of goods and passengers. It may result from a larger proportion being carried of passengers and goods charged at the higher rates."

"The great variation in the cost of carriage on the different lines deserves serious attention. If one line can carry goods at $\frac{4}{10}$ths of a penny per ton per mile, it is clear that a penny ought not to be spent on the same work on another line. If one line can carry a passenger a mile for less than $\frac{2}{10}$ths of a penny, the cost of another ought not to be upwards of $\frac{4}{10}$ths of a penny. If one line runs its trains at 2 shillings 9½ pence a mile, other lines ought not to spend from 3 shillings 8 pence up to 6 shillings 11 pence per mile."

"The coal question affects the expenditure but slightly, and it is to be noticed that the mileage cost is lowest on the Madras, which is worse off in respect of fuel than any other line. The advantage which the East Indian Railway has over other lines in regard to coal may be gathered in some degree by a comparison of the working cost on the Jubbulpur and main line of the East Indian Railway.

"It cannot be said that the cost of carriage must necessarily be less on the lines which have a comparatively large traffic, as, for instance, on the East Indian, than those which have a small traffic, for it is to be observed that the line which is worked most cheaply is the Madras which has the least traffic of any."

"One principal cause of the high cost of working Indian lines evidently is the insufficient loading of the trains and the consequent unnecessary mileage run."

"Taking the maximum freight of a train at 200 tons, the average freight, supposing the traffic all in one direction, would be 100 tons. But we know that the traffic is not all in one direction, and we might therefore reasonably expect the average freight to be somewhere between 100 and 200 tons, nearer, perhaps, the lower than the higher limit. On the East Indian the average is only 109 tons, a little above the lower limit; it is certainly too low, but nevertheless more than twice as much as the lowest average, and one-third more than the highest average on other lines. An average of from 120 to 140 tons would not be too much to expect on all lines."

"The passenger freightage is also much too low for lines which have their traffic entirely under their own control, and its variation shows that some lines at all events, if not all, must be working wastefully. It is to be noted that on the Great Indian Peninsula the profit on passenger traffic is practically nil, although its average rate is higher than that of any other line."

"It would seem that the best hope of reducing the cost of carriage lies in the substitution, to a very large extent, of mixed trains for separate passenger and goods trains, because by this plan only, can the train mileage be largely reduced without diminishing the necessary facilities for passenger traffic. The attention of the proper authorities cannot be too strongly directed just now to this subject. It is of importance not only because of the large direct saving which might be effected by reducing working expenses, but much more because the cost of carriage must govern the charge of carriage, and the traffic on Indian Railways has so far fallen short very largely of the expectations formed of it. This might be attributed in great measure to the heavy rates charged. Taken at per mile, they are, perhaps, not extreme, but the peculiarity of Indian traffic is the low value of the bulk of the goods offered and the great distances they are carried. From these two causes, combined with the cost of carriage, at present rates form such an addition to the prime cost of the class of goods to which railways must look for the bulk of their business, such as seeds, rice and grain, as either to exclude such goods altogether from commerce or to compel them to resort to other means of reaching their destination when such other means exist."

"It would seem not too much to expect that with judicious management the cost of transport might be reduced to an average on all lines of about one-third of a penny per ton per mile, in which case, assuming the quantity of goods offered for transport to increase largely, a charge not exceeding the half of the present average of all lines would be sufficient."

"What a traffic such a reduction might bring upon the railways is, of course, a point on which great differences of opinion may exist, but there is no *primâ facie* reason why there should be found in India any exception to the general rule that low rates make traffic."

In the year 1871-72, the results of which were discussed in the remarks just quoted, there was a net sum of Rs. 1,58,29,000 chargeable to the revenues of India to make up the deficit in the guaranteed interest of the Indian Railways, and it became a question for serious consideration by the Government as to how to reduce these large sums. It was thought at that time that the railway fares and rates were not sufficiently attractive to draw enough traffic, and the views expressed in the report on Indian Railways, by the Government Director in England to the Secretary of State for India were to the following effect :—

"In a country like India, especially where the population is large and poor, it would be unwise to impose such rates for the conveyance of passengers as would remove the power of travelling from the great majority of the people. The true policy would seem to be to fix a rate which, while leaving a margin of profit upon the cost of conveyance, would benefit the largest number to travel. If this is the correct view, it can now be understood how the interests of the railways and of the travelling public coincide. The same remarks will apply to charges for goods, and often with greater force, as for example in cases where water carriage can compete with the railway, and where large tracts of land are kept out of cultivation and mineral districts are unworked, in consequence of the cost of conveyance to a market raising the price of commodities beyond the consumers' means. Allowances must of course be made for variableness of trade, as the average cost of conveyance will in some measure be regulated by the amount carried; but this may be covered in the long run by a moderate margin; and it cannot be doubted that large traffic at low rates gives a safer and greater revenue than a small traffic at high rates. The first and foremost point to be ascertained therefore, is, what is the cost of conveyance ? and this can be arrived at only after a careful examination of the working expenses for a sufficient period to cover different seasons, and to include their influences on traffic which enable a fair average to be taken."

The Government of India also addressed a despatch to the Secretary of State in which in connection with the matter of low fares and of control by the Government on railway rates and fares it was stated as follows :—

Views of the Government of India in the matter o control of rates and fares.

"In India, when the Government gives a guarantee of interest, in addition to the other privileges allowed to the railway companies, we are of opinion that it has a still stronger right, and is bound by a more imperative duty, to look to the interests of the people in the matter, for our belief is that a railway best serves its own interests as well as those of the Government by accommodating itself to the wants of the people."

The advisability of railway fares and rates being lowered in the interests of the railways and the public was discussed in 1873, and it was officially stated by the Government that as the principal lines had been at work for several years, the question of rates and fares might safely be considered as passing from the experimental stage to one, in which results should be the guide to correct conclusion. The necessity for reduction in goods rates, especially having regard to the fact that it was discovered that a large amount of traffic was yet carried by roads for fairly long distances and by river for more than 300 miles, even when railways were quite close, was being brought home to the railway companies, and as the railway mileage was extending, it was thought fit to give the new lines the benefit of such rates and fares as would be most beneficial to them, as well as to the public.

Railways in 1873.

The Railway map of 1873 shows the following railways open for traffic :—

Guaranteed lines.

East Indian Railway, 1,503 miles . .	Calcutta to Delhi (*via* Burdwan, the loop line, Luckeeserai and Allahabad). Chord line – Burdwan to Luckeeserai. Branch line Allahabad to Jubbulpur.
Great Indian Peninsula Railway, 1,266 miles.	Bombay to Bhusaval. Bhusaval to Jubbulpur. Bhusaval to Nagpur. Bombay to Raichoor (the point of junction with the Madras Railway).
Madras Railway, 657 miles . . .	*South West line.* Madras to Beypore. Branches—Jalarpet to Bangalore *North West line.* Madras to Raichoor (the junction with the Great Indian Peninsula Railway) with a branch from Belleaury to Gondacool.

Bombay, Baroda and Central India Railway, 407 miles.	Bombay to Ahmedabad. Branches. Ahmedabad to Wadhwan. Anand to Dakore.
Scinde, Punjab and Delhi Railway, 674 miles.	Delhi to Lahore and Mooltan in the Punjab and Kotri to Karachi in Sindh.
Indus Flotilla Service	From Mooltan to Kotri.
South Indian Railway, 168 miles . .	Negapatam to Trichinopoly. Trichinopoly to Erode (junction with the Madras Railway).
Eastern Bengal Railway, 156 miles . .	Calcutta to Goalando (*viâ* Kooshtia).
Oudh and Rohilkhand Railway, 647 miles.	Benares to Moradabad. Cawnpore to Lucknow. Nawabganj to Byramghat. Chandaosee to Allyghar.

State lines.

Calcutta South Eastern Railway, 28 miles .	Calcutta to Canning on Matla River.
Nalhati Railway, 27½ miles. . . .	Nalhati to Azimganj.
Khamgaon, 7½ miles.	From Jalamb on the Great Indian Peninsula Railway Nagpur branch to Khamgaon.
Amraoti, 6½ miles	From Badnera on the Great Indian Peninsula Railway Nagpur branch to Amraoti.
Patreo, 22 miles	A branch from the Bombay, Baroda and Central India Railway to the Salt works on the Runn of Cutch.
Tirhoot, 53 miles	From Champta Ghat (on the Ganges opposite Bath on the East Indian Railway) to Durbhanga.
Rajputana Railway, 32 miles . . .	Agra to Bharatpur.

For the State lines, instead of mileage rates, station to station rates were quoted in lump sum, irrespective of distance. They were as follows :—

Rates and Fares on State lines.

Goods per maund.	annas	*Per passenger.*	annas.
Special class . . .	2	1st class	8
1st class	4	2nd class	4
2nd class . . .	6	3rd class . . .	2
3rd class . .	8	4th class . .	1

Taking 6 miles as the average distance between stations. the lowest class fares came to about 2 pies per mile, but the goods rates were rather high. For ten miles, the minimum distance for charge for goods traffic, and assuming this to be the distance between two stations, 2 annas per maund gives a rate of 2·4 pies per mile. These rates were subsequently withdrawn and mileage rates were quoted, which will be referred to later on.

Reduction of rates and fares on company-worked lines as the result of discussion with the Government.

The discussion between the Government and the Railway companies from time to time resulted in reductions of rates over various railways, which had effect in 1876-77, and the following comparison shows the extent of the reductions.

Average sum received for carrying one ton one mile.

—	During 1875-76.		During 1876-77.	
	pence.	pies.	pence.	pies.
East Indian Railway	1·013	8·104	·895	7·16
Great Indian Peninsula Railway . . .	1·498	11·984	1·115	8·92
Madras Railway	1·194	9·552	1·135	9·08
Bombay, Baroda and Central India Railway .	1·38	11·04	1·304	10·432
Eastern Bengal State Railway . . .	1·956	10·048	1·185	9·48

The low rates for goods had the desired effect. The gross revenue of the Indian railways during 1876-77 showed an improvement of 91 lakhs of rupees. The East Indian Railway frankly admitted in the report for that year that "it was the reductions in rates which led to the development of traffic," and the Great Indian Peninsula Railway authorities also made the observation that the "modification in rates and fares, which have been adopted, had been beneficial in aiding the development of the traffic." The Delhi and the Scinde Punjab Railway and the Oudh and Rohilkhand Railway also made somewhat similar remarks that the results in "Traffic and Revenue" attained by them were the result of the reductions in rates. The grain and salt traffic were mostly benefitted by the lower rates during this year; the exports of wheat were exceptional, as compared with all previous records of export. The shipments of wheat amounted to 1,377,208 cwts. and of oil seeds to 3,740,362 cwts., Calcutta alone shipping 3,404,800 cwts. of wheat.

On the Eastern Bengal Railway, where the salt rates were reduced by 23 to 33 per cent. the effect was that "for one year under the new rates there was an increase of 500 per cent., *viz.*, from 70,521 maunds to 422,976 maunds."

About this time the Government Director of Indian Railway Companies visited India and he was accompanied on his inspections by Colonel White, R.E., Consulting Engineer for Railways, Bombay; the latter held up the Oudh and Rohilkhand Railway as the model line for simplicity of rates and fares. He remarked as follows:—

Simplicity of rates and fares over the Oudh and Rohilkhand Railway Company's line.

"In the lower class, the fare is 2 pies. Those who wish for exclusive accommodation can have a berth by paying 9 pies. The lower classes give almost the same sitting accommodation as the second class on other lines."

"The classification of goods is extremely simple and the rates are low. The classes are "Special," "Low," "Middle," and "High," and any trader by an inspection of the rate boards, hung up at stations, can tell at once what it will cost him to carry a maund of goods, to any station on the line. The terminal charge, which is only one pie per maund for distances up to 60 miles, is not levied when the goods are carried for distances of more than 60 miles."

It may not also be out of place to mention that the increased traffic in 1876-77, at low rates, was carried on the Indian Railways without the percentage of working expenses to gross earnings going up, as will be seen from the following remarks extracted from the Government report on Indian Railways for that year. "There is a great improvement and full of encouragement for the future ...."

"The gross receipts for the guaranteed lines for the year, were Rs. 8,36,98,830 compared with Rs. 7,11,38,980. The expenses were Rs. 3,97,62,960 compared with Rs. 3,53,74,840 being 47 per cent. as against 49 per cent. of the receipts."

"The gross receipts of the State lines amounted to Rs. 42,40,090, as compared with Rs. 29,81,810 and the expenses to Rs. 31,06,950 compared with Rs. 22,68,270, being 73 per cent. as against 75 per cent."

It will be seen that the percentage of working expenses on the State lines were higher than on the guaranteed lines, being mainly attributed to the fact that at that time the State lines consisted of short branches scattered all over the country carrying only short-lead traffic, and each line required a separate management though for a few miles of length only.

1878 and the opening of the railway from the Punjab to Karachi.

The year 1878 was marked by the opening of the Indus Valley State Railway. It connected the railways of Northern India (by its junction with the Punjab Delhi Railway at Mooltan) with the port of Karachi, the other junction of this line being with the Scinde Railway at Sukkar. The river Indus at this point was not yet bridged and there was a ferry service across the Indus from Rohri to Sukkar. This new line gave an impetus to the trade of the Punjab to Karachi.

The results of the reductions in the goods rates encouraged the Government to take action as regards passenger fares, particularly in connection with the lowest class fares of the East Indian Railway, which was at this time about to be taken over by the Government but to be again leased to the company under a separate contract, made in 1879.

The following was the position described as regards lowest class passenger fares on the important lines in India in 1878-79.

Third class Passenger fares in 1878-79.

"The lowest fare is on the Punjab Northern State line where 1·8 pies is charged. The Oudh and Rohilkhand for some time had a 2 pic rate for the third class. The Madras Railway have lately followed the example of the South Indian and have adopted 2 pies per mile also. The Scinde Punjab and Delhi Railway have also been considering the same........

"The East Indian Railway with an uniform length open, during the past 5 years, increased its third class traffic 21 per cent. in numbers and 19 per cent. in receipts with 3 pies fare, whereas the Oudh and Rohilkhand Railway Company, with a 2 pie rate increased 25 per cent. in numbers and 50 per cent. in receipts. The Great Indian Peninsula Railway

with a 2½ pies rate increased 53 per cent. in numbers and 34 per cent. in receipts."

It was also noted that the average cost per passenger mile on the East Indian Railway main line was ·15 pence (1⅕th pies) and the average sum received ·374 pence (about 3 pies) leaving a profit of ·224 pence (1·8 pies), and therefore, there would appear to be good ground for expecting that a moderate reduction in the rate would soon regain, through the large number of travellers, the amount that would be relinquished in the shape of reduced fares.

In the new contract with the East Indian Railway the following clause was provided :—

1879 and the East Indian Railway new contract.

" The Company shall charge rates and fares for the carriage of goods and passengers, as may from time to time, be fixed by the company, with approval of the Secretary of State. Provided that the Secretary of State may require the charges for the conveyance of any mineral or mineral substance or for any article of agricultural produce, over distances of not less than 300 miles, to any rate not below ⅛th of a pie per maund per mile for full wagon loads, and may also require the fare of passengers, conveyed in closed carriages with seats to be reduced to any rate not below two pies per mile."

About this time 2 pies per mile was about the lowest fare on Indian Railways, the East Indian Railway fare being 50 per cent. higher than this figure, and the intention was apparently to bring down their rate ; hence the provision in the contract that the Government could order a reduction in the fare to a figure not below 2 pies. This revised clause in the agreement was taken advantage of by the Government, not very long afterwards, in the matter of reduction in the passenger fares of the East Indian Railway from 3 to 2½ pies per mile inspite of protest from the East Indian Railway Company's Agent in India. But the reduction did good to the Railway and to the public.

As regards the rate of ⅛th pie for goods traffic up to which the Government could order a reduction, it may be noted here that ⅛th pie per maund equals 4·5 pies per ton per mile ; 4·083 pies per ton per mile was the lowest charge then being levied on grain and coal by the East Indian Railway between certain points ; and the only other railway that was charging a similar rate was the Madras Railway, which had a 4-pie rate for grain ; all the other railways were levying a higher rate excepting the two State lines, *viz.*, the Indus Valley and the Punjab Northern State. It seems, therefore, that the Government did not think it advisable to go below the lowest rate that was being charged at the time, *viz.*, ⅛th pie, although in a paper, issued by the Government in connection with the export of wheat from India to the United Kingdom, it was pointed out that—

" While the lowest rate in India for grain at 4 pies per ton mile for 450 miles gave a charge of 18 shillings 9 pence, a ton of grain on

American Lines was carried for this distance for 10 shillings, so that the American Railway rates were yet considerably cheaper."

It has already been remarked in the previous chapter that the rates on American Railways were brought down by severe and reckless competition between themselves, resulting in the bankruptcy of many lines in that country, and it may not, therefore, always be safe to compare the rates and the net returns on the capital outlay of the American lines with those of Indian Railways, when it is to be remembered that the present capital of the American lines does not represent the amounts actually spent on the lines. But it may, however, be noted that it was the comparison between the rates for grain on American Railways with those charged on railways in India that led to the reduction in wheat rates for export *viâ* the Eastern and the Western Ports just after the opening of the Rajputana Railway through to Ahmedabad, resulting in an exceptional increase in the export traffic in this country.

In the case of an Indian agricultural produce, the surplus of which finds a market in distant countries overseas, the cost of placing the productions of the other nations in the consuming markets cannot altogether be ignored, especially when the produce of India is in competition with the production of other nations in the consuming markets. It has also been seen that under normal conditions, a bumper crop in other countries, which send wheat to Europe, affects the price of Indian wheat adversely, provided that there is also an abundant supply in India at the same time, and there is a surplus for export.

The next important event in the history of the Indian Railways was the completion of the Rajputana-Malwa Railway on metre gauge in 1880, but it was not open for public traffic till January 1881, when it formed a junction with the Bombay, Baroda and Central India Railway 5′ 6″ gauge at Ahmedabad.

The total railway length open for traffic in India on this date was 9,325 miles.

Opening of the Rajputana Malwa Railway and its junction with the Bombay, Baroda and Central India Railway in 1881 and the commencement of competition between the Calcutta and the Bombay ports and the railways of Northern India generally.

The distance from Delhi to Bombay was now reduced to 888 miles, *viâ* Ahmedabad, against the distance of 1,231 miles from Delhi to Bombay by the through broad gauge route (*viâ* Allahabad and Jubbulpur). This connection at Ahmedabad also offered an alternative route from Indore, Ujjain, Rutlam, Neemuch and other places in Marwar to Bombay. Just about this time, the Dhond-Manmad line (which was built by the State on 5′ 6″ gauge to connect the railway systems of northern and southern India by a short chord, and to obviate the necessity for traffic between the north and the south ascending and descending the western ghauts) was handed over for working to the Great Indian Peninsula Railway Company whose route it short-circuited.

Till the end of 1880 the rates of the Indian Railways were not subject to competition between the railways themselves, inspite of the fact that all the four ports, *viz.*, Calcutta, Bombay, Karachi and Madras, had been connected by railways working independently, and the Suez Canal route had been open for more than 10 years. Each railway practically served its own territory. The Bombay port had railway connection with Northern India, but the circuitous distance *viâ* Jubbulpur was a great bar to its competing successfully with the Calcutta port, especially as the control of rates from Agra, Delhi, Cawnpur and the Oudh was in the hands of the East Indian Railway, (which was interested in the Calcutta port) up to Jubbulpur junction. Hitherto the only competition the railways were subject to were the river and road competitions, the former for long distances even affecting more than 300 miles, *e.g.*, from Patna to Calcutta on the East Indian Railway. The Eastern Bengal State Railway jute rates were also subject to river competition, and so were the rates for cotton from Surat and the vicinity to Bombay on the Bombay, Baroda and Central India Railway.

The connection of the Rajputana Malwa Railway with the Bombay Baroda line and the opening of the Cawnpur Achnera Railway introduced a new era in the rates history of the Indian Railways.

While the Bombay Chamber of Commerce and the Bombay lines were considering the advisability of giving Bombay low rates from northern India, the Finance Department of the Government of India, in their financial statement for the year 1881-82 drew attention to the fact that in the interests of the development of wheat exports of India, which had been attracting their attention for some time past, the railway rates for wheat in this country should receive consideration, inasmuch as they were very high in comparison with the rates of the American Railways.

The Bombay, Baroda and the Rajputana Railways reduced the rate for grain for Bombay from Delhi from Re. 0-13-6 to Re. 0-11-0 per maund, and it will be noted that the mileage from Bombay to Delhi was 888 against 954 miles from Calcutta to Delhi. The Calcutta merchants appealed to the Government and the Government of India ruled that the rates from the northern India to Bombay should not be lower than those to Calcutta. This did not satisfy the Bombay traders, who had the matter brought to the notice of the Secretary of State in London, who in turn wrote to the Government of India that they should not have interfered in the matter of competition between railways. The explanation from India was that their orders had been passed on the ground that although the distance between Delhi and Calcutta was longer by 66 miles, the East Indian Railway serving the Calcutta port, had the advantage of cheap fuel and easy gradients and that, therefore, it could carry the traffic at a cheaper cost. The Secretary of State however pointed out that "to attempt to proportion rates on competing lines to the supposed aggregates of the cost of transport on each was impracticable and would not be desirable even if it were practicable," and in despatch No. 41 Railway, dated 9th March 1882, the Secretary of State distinctly observed that "the advantage due either to geographical position or other circumstances should furnish no reason for imposing on either artificial restrictions in the shape of enhanced rates ...." and later on, the Secretary of State finally disposed of the question by the following decision conveyed in his despatch No. 132 Railway of 19th October 1882 to the Government of India :—

"That rates on Indian Railways should be dealt with as they would be by independent companies.

"That Railway Administrations should be given liberty to fix such rates as were considered most advantageous to their respective lines.

"That the interests both of the Railways and the trade generally would be better served by accepting the legitimate consequences of competition.

"That the interference of Government would be justified only in cases where companies, under the security of a guarantee, might fix rates below what would cover cost of transport with a margin of profit."

At the same time that the competitive rates between the Bombay and the Calcutta ports were under discussion, a difficulty also arose as to the apportionment of through rates between the Bombay Baroda and the Rajputana-Malwa Railways, and the Secretary of State decided that "the principle of mileage division under the Clearing House arrangements may fairly be applied to Indian lines, whatever their original cost of construction or their present cost of working may be."

That the Government of India eventually accepted the legitimate consequences of competition and welcomed reductions in rates as the result of the competition is apparent from the following remarks in their Administration Report on Indian Railways for the year 1882-83.

"The rates for carriage of grain have been considerably reduced, in competition, on the East Indian, Rajputana and the Punjab lines, and it is to be regretted that, in the absence of competition, the Great Indian Peninsula Railway Company have not thought fit to make similar reductions. The Bombay Chamber of Commerce are now urging a reduction of rates on the Great Indian Peninsula Railway and a lower cost of carriage would doubtless, by stimulating the export of wheat from the Central Provinces, prove most remunerative to the railway as well as beneficial to the districts concerned."

Apparently, the representation of the Bombay Chamber of Commerce had the desired effect and the Great Indian Peninsula Railway lowered the grain rates from the Central Provinces to Bombay all round and the reductions varied from Re. 0-1-3 to Re. 0-1-6 per maund. Rates for "Bengal cotton" were also reduced from northern India to both Calcutta and Bombay.

It may, however, be pointed out that on a mutual understanding between the Bombay, Baroda and Central India Railway and the Rajputana Malwa Railway on the one side and the East Indian Railway on the other, a difference of Re. 0-1-6 per maund in favour of Calcutta was maintained in the rates from Delhi and Agra for grain and cotton, all other rates being, however, equal to both the ports, it being apparently accepted by the port of Bombay that the lower sea freight from that port to Europe counterbalanced any such difference in favour of Calcutta in the way of Railway freight.

This position was maintained till July 1906, when the Bombay, Baroda and Central India Railway came down in their rate for wheat to Bombay from Delhi to Re. 0-7-1 per maund, the rate to Calcutta being fixed at Re. 0-7-6, *i.e.*, each railway fixed its rate to its port on distance basis at the minimum of $\frac{1}{10}$th pie per maund per mile. These rates were enhanced in October 1916, and this will be dealt with in the chapter on "Competition and Combination and Traffic Agreements."

Issue of Government circular in 1883 enunciating general principles regulating the basis of railway rates and a few remarks thereon.

In March, 1883, the Government enunciated the general principles on which rates and fares should be fixed (*vide* Circular No. 162 R.T., dated 2nd March 1882). Briefly, the principles laid down were :—

(1) That the management should principally aim at attracting the maximum quantity of traffic the line could carry at reasonably low rates.

(2) That all rates, though capable of classification into groups, should be considered as "Special" and be fixed with due regard to—

(*a*) what the article would bear,
(*b*) the quantity obtainable.

(3) That the rates might vary between limits represented by—

(*a*) the cost of carriage,
(*b*) the tax which the trade will bear.

(4) That the whole circumstances of the traffic as regards empty running, intermittent nature of traffic and the effect of competition by other routes, should be considered.

(5) That in the case of competition, the principle of rate calculation should be materially altered. While such factors as capital cost, gradients, cost of fuel and carrying power, should be duly taken into account, the rates must ultimately be governed by the necessity of attracting traffic and not by any arbitrary standard of profit.

Although the views expressed were not very clearly defined, the pronouncement is important as indicating the acceptance of two general principles which are now recognised by most railway economists. These are :—

First.—That in ordinary circumstances the cost of service represents the bottom limit of a rate, while the maximum depends on what the traffic will bear, or, as it is now more commonly expressed, on the value of the service to the trader.

Second.—That in special circumstances the bottom limit disappears to a certain extent, and the determination of the rate is influenced solely by the consideration of securing the maximum traffic.

As it was obviously impossible to provide for all the special circumstances which might arise, the Government in order to protect its own interest involved in the shape of guaranteed interest on the capital outlay on Indian Railways, had perforce to limit the power of the railways of entering into or carrying on wasteful competition by fixing minimum rates a few years later.

Traffic conference in 1884 to settle the through tariffs of various railways.

Between the years 1884 and 1886 several complications arose in the matter of rates policy of the Indian Railways. This was anticipated from a long time, and, therefore, a Conference of Traffic Officers of the Indian Railways together with the representatives of the Government and of the trade was held in Calcutta in 1884 and there were 18 sittings. Certain general principles were laid down, such as uniform classification and uniform mileage rates for ordinary class goods, division of through rates on mileage; and "station to station rates" were suggested to be published by each Railway for selected items of traffic carried between its own principal stations and stations on foreign railways. This Conference went a great deal into matters relating to tariff simplification, and had the suggestions of this Conference in the matter of uniform classification been carried out, and the proposed annual tariff conferences been held, the major portion of the work of the present Tariff Simplification Committee which came into existence some 20 years later, would have been done years before, but unfortunately as one of the important lines (*viz.*, the Great Indian Peninsula) did not accept the proceedings and recommendations of the 1884 Conference, the arrangement fell through.

The Great Indian Peninsula Railway objected on the ground that if uniform classification and mileage rates were charged for through traffic it would mean loss of revenue to them as their class and other rates were higher than those of other lines, and the Great Indian Peninsula Railway class rates remained high till it was taken over by the Government.

Important Events of 1884-1886.

Now to refer to the important events that took place between 1884 and 1886. The Rajputana-Malwa Railway and its branches were made over to the Bombay, Baroda and Central India Railway Company for working. The Cawnpur-Farrukhabad, the Furrukhabad-Hathras and the Hathras-Achnera Railway lines were first amalgamated and made into one system and worked thus for a short time and then subsequently amalgamated with the Bombay, Baroda and Central India Railway. The Eastern Bengal Railway was taken over by the Government and this line and the Northern Bengal State line, which had been built on metre gauge from Sara to Siliguri, were amalgamated into one State line. The Bengal and North Western line was opened from Sonepore and extended as far as Bahraich and the East Indian Railway built a branch from Bankipur to the banks of the Ganges at Digaghat to form a connection at this point with that line by means of a ferry.

The position as regards competition between railways was summed up as follows in Government of India Public Works Department despatch No. 120, dated 7th August 1885 to the Secretary of State :—

Position as regards competition between railways described in a Government of India despatch to Secretary of State in 1885.

" The fact of many of the newly constructed lines, which are at present feeders to the main trunks, having by their extensions gradually come into close proximity with one another, has rendered careful adjustment of the freight rates of the main trunk lines—a matter of great delicacy in order to prevent any undue preference being given to the traffic of one Administration over that of another, and requires that any change of rate, however local in its significance it may, at first sight, appear, should receive the closest examination and scrutiny from the point of view of each of the lines concerned. To show that these difficulties are not purely imaginary, we may now briefly enumerate some of the more important questions of the class that have arisen within the last few years."

" The first competition arose in 1881, on the completion of the through route from Bombay to the North-Western Provinces and Punjab, *viâ* Ahmedabad to Agra and Delhi, and showed itself in the rivalry of the three routes for the piece-goods traffic of those provinces .—

(*i*) From Calcutta *viâ* the East Indian Railway.

(*ii*) From Bombay, *viâ* East Indian Railway and Great Indian Peninsula Railway.

(*iii*) From Bombay *viâ* Bombay, Baroda and Central India Railway and Rajputana-Malwa Railway.

" This was followed in 1882 by the competition of rival ports of Calcutta and Bombay for the grain export of the same districts, and the settlement of the rates on fairly satisfactory basis had eventually to be undertaken by Government."

" The difficulties as regards the claims of the rival seaports were, however, no sooner temporarily settled than others arose with the Oudh and Rohilkhand Railway. This line is peculiarly situated as regards the East Indian Railway, having three junctions—Aligarh, Cawnpore and Benares, and found itself injured by the uniform freight charged by the East Indian Railway for export grain from all its northern stations, Cawnpore to Delhi ; the result of which was to draw on to the East Indian Railway from the Oudh and Rohilkhand Railway by the northern junctions, instead of allowing it to flow its legitimate course by the shortest route, thereby depriving the Oudh and Rohilkhand Railway of its proper mileage, while at the same time causing the East Indian Railway to carry the traffic for a longer lead of 192 miles for nothing. This question is still under discussion between the Administrations concerned.

"In 1884, the opening of the Bengal and North-Western Railway added another complication to the matter. The special reduced rates of the East Indian Railway for long distance traffic tend to draw the traffic from a portion of the district served by the Bengal and North-Western Railway on to the East Indian Railway *viâ* the Oudh and Rohilkhand Railway at Benares, instead of *viâ* the junction of the former railway at Digha, again causing the East Indian Railway a longer lead for less charge. The completion of the Cawnpore-Achnera Railway has also introduced another element of competition with the East Indian and Oudh and Rohilkhand Railways, the rival routes for the important Sambhar salt traffic and other commerce between Oudh and Rajputana being the Cawnpore-Achnera metre gauge route without the break of bulk *versus* the broad gauge routes *viâ* the East Indian Railway and Oudh and Rohilkhand Railway with transhipment at Agra."

The reasons for the application of the same rate for grain from the junctions of Aligarh and Cawnpore to Howrah over the East Indian Railway, which prevented the Oudh and Rohilkhand Railway obtaining a good lead on its traffic originating on its stations near Aligarh, were explained by the East Indian Railway to be due to their rate between Howrah and Delhi being reduced to Rs. 60 per 100 maunds owing to competition with Bombay, after the Rajputana-Malwa Railway joined the Bombay, Baroda and Central India Railway and the rate of Rs. 60 per 100 maunds quoted for Delhi was applied to all stations on the length Delhi to Cawnpore. After some correspondence with the Government a rate of Rs. 53 per 100 maunds was quoted from Cawnpore and *viâ* from the Oudh and Rohilkhand Railway to Calcutta. But this rate also failed to give the Oudh and Rohilkhand Railway sufficient inducement to send the traffic *viâ* Cawnpore, as they would have had to come down very low in their rates; in some cases they would get the same on a shorter lead *viâ* Aligarh than for a longer lead *viâ* Cawnpore.

As regards competition for piece-goods traffic, the East Indian Railway at one time wanted to maintain equal rates from Delhi and Agra to Bombay *viâ* Jubbulpore, in competition with the Bombay, Baroda and Central India and Rajputana-Malwa Railway routes *viâ* Sabarmati, but as the distance from Delhi to Bombay by the latter route was 888 miles, 847 miles from Agra to Bombay, as against 1,234 miles *viâ* Jubbulpore from Delhi and 1,118 miles from Agra, the claim of the East Indian Railway was not recognised in so far as equalisation of rates *viâ* Jubbulpore was concerned.

As to the Sambhar salt traffic from the Rajputana-Malwa Railway to the Oudh and Rohilkhand Railway *viâ* Cawnpore, the East Indian Railway route was shorter by 83 miles and there was a great deal of force in the argument of the East Indian Railway to hold this traffic to their route.

In 1885, while the rate for grain from Digha Ghat to Howrah was Rs. 34 per 100 maunds, that from Benares to Howrah was Rs. 37 for the same quantity; or in other words, the East Indian Railway for carrying 100 maunds of grain for 143 miles extra lead (Digha Ghat to Howrah 332 miles and Benares to Howrah 475 miles) got Rs. 3 or the rate per maund for this extra lead came to 6 pies, or an equivalent of $\frac{1}{25}$th pie per maund per mile. This was considered unfair to the Bengal and North-Western Railway, who pointed out that owing to comparatively very low rates from Benares to Howrah, the Oudh and Rohilkhand Railway were able to compete for traffic from the Bengal and North-Western Railway stations north of Gogra by adjustment of rates from Ajudhya, Fyzabad and such other places in order to draw traffic to their line from the North bank of the river and to forward it *viá* Benares to the total loss of such traffic to the Bengal and North-Western Railway, from whose area it was drawn.

The Scinde, Punjab and Delhi Railway was acquired by the State, and this line and the Indus Valley and the Punjab Northern State were amalgamated into one system, now known as the North Western. This took place on 1st January 1886 and almost simultaneously a junction of this system was formed with the Oudh and Rohilkhand Railway at Saharanpur. The Rajputana Railway had extended its line from Rewari to Ferozpur in 1885 to form a junction with the Punjab line (*viz.*, the North Western Railway).

The year 1887 saw the completion of the Benares bridge of the Oudh and Rohilkhand Railway, and the Jubilee bridge of the East Indian Railway over the Hughli was also opened the same year. Running powers were granted to the East Indian Railway for its trains over the Eastern Bengal State Railway from Naihati to Sealdah and Chitpur on the Calcutta side of the river Hughli. It was arranged that for each coaching, goods or mixed train run by the East Indian Railway over the Eastern Bengal State Railway, the East Indian Railway would pay to the Eastern Bengal State Railway a sum of Rs. 2 per train mile on the distance travelled in either direction. The running powers have been exercised for goods traffic only; for a time the East Indian Railway ran passenger trains between Sealdah and Howrah but as these trains did not prove remunerative, they were withdrawn.

Developments in 1887, due to opening of the Benares Bridge and the connection between the Oudh and Rohilkhand Railway and the North Western Railway at Shaharanpur.

The Southern India was, however, yet free from any severe complications due to rates competition, because in 1887, the Nizam's line was not open up to Bezwada and the Southern Mahratta line from Guntakal to Bezwada was also under construction and so was the section from Satara Road to Belgaum.

In 1887 the Government expressed the view that the time had now come when India was passing " beyond the first and simple stage of railway development into the later and more complex " as was evident " from the numerous cases of disputes between the various railway companies and the complaints that were received by the Government of India from time to time." The position was described as follows in

the Government of India despatch No. 4 Railway of 10th January 1888 to the Secretary of State :—

A general review of the railway situation in 1888 and the dictation of the Government policy in the matter of railway rates and fares to railways in a circular and introduction of minimum rates in order to limit the powers of railways in the matter of quoting unremunerative rates in competition between themselves.

" Apart from the rivalry between the rates to Bombay and Calcutta for the export of grain from the United Provinces, the peculiar situation of the Oudh and Rohilkhand Railway with its three junctions at Aligarh, Cawnpore and Benares have for some time past led to competition between that Company and the East Indian Railway, fresh elements being introduced by the completion of the Saharanpur extension in 1886 and of the Ganges bridge in 1887.

" The opening of the Bengal and North-Western Railway in 1884 brought that company into competition with the East Indian Railway and the transfer of the Cawnpore-Achnera Railway to the Bombay, Baroda and Central India Railway placed the direct metre gauge route from Sambhar lake to Cawnpore in antagonism with the broad gauge route *viâ* the East Indian and the Oudh and Rohilkhand Railway with transhipment at Agra, both systems struggling by bidding against each other by low rates to secure the important salt and sugar traffic between Oudh and Rajputana."

" The construction of the Rewari-Ferozepur Railway and of the Ferozepur bridge has initiated a rivalry between the North Western and the Bombay, Baroda and Central India Railways, for the possession of the export trade from Karachi and Bombay respectively.

" In endeavouring to arrive at a solution which should comprehend all the complicated references that have arisen from the competition between these various lines, we have been guided by the view enunciated by Her Majesty's Government to the effect that we should allow rates and fares of Railways in India to be dealt with as nearly as possible as they would be by independent companies, the intervention of the Government of India being for the most part confined to the prevention of undue preference and to the establishment of maxima rates and fares."

" These principles enunciated by us to railways have been embodied in a Resolution (No. 1446-R.T. of 12th December 1887)." ....

The principles as enunciated by the Government of India to the various railways and Local Governments in Circular No. 1446-R.T. of 12th December 1887, were as follows :—

Principle I.

" That to protect the public and to prevent unreasonable charges **on** the part of the Railway Administration it was necessary for **the** Government to impose restrictions as regards the maxima fares to be evied for the carriage of all classes of passengers, and the maximum rates for all descriptions of goods."

It was also thought, however, that this principle although recognised in other parts of the world where railways had been opened, should be slightly modified as the circumstances in India were somewhat different ; it was considered necessary to fix minima as well as certain maxima

rates and fares, because it was possible for the railways under the system of guarantee to reduce the rates, in competition with one another to a point when they ceased to be remunerative without the share-holders being affected, as they were protected by the guarantee.

Principle II.

"That the charges made to the public are admissible of division into two heads." (*a*) Mileage rates and fares, which necessarily vary to some extent with the distance the passengers and goods are carried; and (*b*) terminals: this latter being a fixed charge for business, incidental to the business of a carrier.

The Government did not fix any maxima for terminals, but laid down that if a person made a complaint and showed cause, they reserved to themselves the right of taking evidence and fixing, what they considered a reasonable terminal for a particular station.

Principle III.

"That when once minima and maxima fares and rates have been fixed, any further interference on the part of the Government in the matter of fares and rates is only a restraint on trade. The Railway Administration, who know their interests best, should be allowed to alter their rates within the prescribed maxima and minima to suit the various conditions under which commercial business is everywhere carried on."

"In granting this freedom between the maxima and minima rates, it was assumed that the Clearing House principle, that in the case of the competitive routes between two stations the Company owning the shorter route fixes the rate, is accepted."

Principle IV.

"That, although in the interests of the public, the Government should abstain from direct interference in the matter of rates and fares, yet there are certain ruling principles, which Government as the guardian of public interests, must see complied with by the railway administration. There should be no undue preference; in other words, Railway Administration ought not to be permitted to make preferential bargains with particular persons or companies, such as granting them scales of charges more or less favourable than those granted to the public generally. Again, in cases, where the traffic offering is sufficient to justify this arrangement, Railway Administration must give reasonable facilities for public traffic between any two railway stations, each railway administration being contented to receive for its share of the through rate, less than its ordinary local rate."

A copy of the Circular (No. 1446-R.T., dated 12th December 1887) containing these general principles was sent for the information of the Secretary of State and the Circular was also published in a supplement to the *Gazette of India.*

As an appendix to this circular, was issued the schedule of maximum rates and fares which were subject to the following conditions:—

(*a*) "That the schedule of maxima and minima rates and fares forming Appendix A to this Resolution shall be adopted by all railway worked directly by the State, and by all other railway administrations whether their lines be already opened or not, so far as their schedule is not inconsistent with any contracts or agreements previously entered into; and that it should not be departed from without due cause being shown."

(*b*) "That in order that the public may have complete information as to maxima rates and fares, which every railway is authorised to charge, the maxima and minima rates and fares shall be published in the goods and coaching tariffs, under the signature of a Consulting Engineer, if a private company, and of Secretary to the Government, if a State line."

(*c*) "That unless sufficient reason can be brought forward against the adoption of this course, the general goods classification now in force on the East Indian Railway shall be accepted by all the railways worked directly by the State, and by all other administrations, with the same proviso as to interference with the existing contracts as under (*a*) above."

The Railways that did not accept this schedule were the Great Indian Peninsula Railway, the broad gauge section of the Bombay, Baroda and Central India Railway and the Madras Railway, to which the East Indian Railway classification (which was the Government classification) and the maxima and minima rates did not apply till several years afterwards, when their contracts expired.

The schedule given in Appendix A was as follows:—

Passenger Fares.

	Maximum pies per mile.	Minimum pies per mile.
1st Class	18	12
2nd "	9	6
Inter "	4½	3
3rd "	3	1⅓

Goods Rates.

	Maximum pie per maund per mile.	Minimum pie per maund per mile.
5th Class	1	1
4th "	5/6	5/6
3rd "	2/3	2/3
2nd "	1/2	1/2
1st "	1/3	1/10

This schedule was, of course, unworkable so far as goods traffic was concerned, because, except for coal, edible grains and a few other staples, coming under the head of 1st class, the railway companies had no latitude at all, the same mileage rate being fixed for the other classes as maximum and as minimum in the schedule above referred to. The East Indian Railway Company's legal advisers considered that the obligations of the Contracts contemplated the prescription of a separate maximum rate for each of the five different classes of goods, and that within the limits so laid down, the Company had the power to vary their charges without reference to Government. They further held that all goods should be arranged in classes and that the transfer of any article from one class to another could not be made without the prior sanction of Government. The Government of India upon a reconsideration of the matter, accepted the opinion thus advanced. In Public Works Department letter No. 749 R.T. of 21st October 1890, certain class rates and conditions were accordingly suggested for adoption on the East Indian Railway and these were accepted with certain reservation by the Company's Board of Directors.

The schedule referred to was not even then finally fixed and the correspondence continued for some time longer and the differences were not disposed of until the end of 1891 (*vide* Public Works Department Resolution No. 369 R.T. of 14th May 1891), when the following schedules were prescribed: -

Revision of the schedule of maximum and minimum rates and fares.

Passenger Fares.

	Maximum pie per mile.	Minimum pie per mile.
1st Class	18	12
2nd "	9	6
Inter "	4½	5
3rd "	3	1½

Goods Fares.

	Maximum pie per maund per mile.	Minimum pie per maund per mile.
5th Class	1	⅙
4th "	⅚	⅙
3rd "	⅔	⅙
2nd "	½	⅙
1st "	⅓	⅙
Special Class	⅓	⅒

The above schedule has remained in force even up to date, with this exception that in July 1910 an important difference was made by withdrawing the "Special Class" and by amalgamating this class with the first class, the effect of which was that goods, for which 1st class rates were charged previously, came under the category of the ⅒th pie minimum instead of the ⅛th pie. But it may however be maintained that between 1889-91, when the matter was being discussed, the Government of India was of opinion (in fact issued orders) that the maximum for agricultural productions and minerals, which came under the head of "Special Class," when conveyed for distances of not less than 300 miles, should not be more than ⅛th pie per maund per mile. In this respect, the Government were for a long time in favour of taking advantage of the powers conferred on them, by the provision in the East Indian Railway contract, that they could order the reduction of such rates up to the limit of ⅛th pie; and the Government also held the view that such low rates as may be obtainable on the East Indian Railway Company's system should, in through booking with foreign lines, be calculated as if the goods were carried over the East Indian Railway locally.

The East Indian Railway observed, in the beginning of 1891, that the reduction of the maximum for agricultural and mineral class goods from ⅓rd to ⅛th pie carried for distances of 300 miles and over, would involve a heavy loss of revenue. With regard to application of low rates on through distances, it was accepted that there was justification for the concession to the public of lower rates over great distances and for large quantities and it was found that in the aggregate they were sufficiently remunerative, but it was held that in cases, where one railway sent large quantities of traffic to a foreign line, and for a long lead over the latter, it was certainly a loss to the Railway, on which the traffic originated, to accept low rates per mile for short distances. The Government of India eventually withdrew the maximum of ⅛th pie for special class goods carried for distances of over 300 miles, and observed that "for the present, they had no desire to press for the acceptance of the principle, which required that such lower rates, as may determine over Company's system for long distance traffic, should, in through booking with foreign lines, be calculated as if goods were carried over one system for the whole distance."

It may be pointed out that the law of undue preference was not passed when the Government of India Circular No. 1446-R.T. of December 1887 was issued enunciating principles regarding undue preference and levy of terminals. But since then, the Indian Railways Act of 1890 has been issued and it provides that there should be no undue preference and that a railway can levy reasonable terminals, but in both cases the remedy in a case of a complaint against a railway for creating undue preference and charging unreasonable terminals lies in a specially constituted court of Railway Commissioners, which has to be created, at the expense of the parties, to try each individual case and no such case has yet been tried since the Act was passed. In some of the contracts with the Railway Companies it has been provided that the Secretary of State has the absolute power to decide whether a charge constitutes undue preference or not.

As to the reasons why ⅛th pie was fixed as the minimum for class goods and ⅒th pie for the special class goods, it would, for the present, suffice to say that in 1887 the average cost of carrying goods on State lines was about ⅒th pie per maund per mile and therefore, ⅒th pie was considered to be about the absolute limit up to which reductions in rates could be allowed in regard to cheap articles, and ⅛th pie was the average earning of State lines for carrying goods one mile and thus ⅛th pie was taken as the lowest charge at which the higher class goods could be carried.

The Government of India had issued another Resolution in 1888 (Public Works Department letter No. 1101-R.T. of 17th October 1888) in which they notified as follows :—(This Circular was superseded by Public Works Department Resolution No. 369 R. T. of May 1891 previously referred to ; but the following may prove useful to show the views held by the Government at the time)-

(a) "That in local booking of goods, every Railway Administration shall be free to fix its own rates for all staples, subject to the maximum rate and the minimum rate of ⅒th pie prescribed by Government.

(b) "That the Eastern Bengal State Railway and the Oudh and Rohilkhand Railway on its transfer to the State shall, as soon as is practicable and convenient, adopt for through booking purposes, the five and special classes of goods generally obtaining throughout the Indian Railway system. It is understood that the South Indian Railway Company also agrees to adopt this classification for through booking. If this be so (these three having been hitherto the only important exceptions) the uniformity of the division of goods for through booking into five and special classes will be practically secured throughout India.

(c) "That in all cases in which the East Indian Railway and the Great Indian Peninsula Railway have come to an agreement as to the inclusion into one of the five classes of any articles, the State Railways, and those Railways * over which the Government has reserved authority with regard to the regulation of rates, shall accept the same classification, provided that the receipts from such article are not of importance as a source of revenue to the railway concerned."

(d) "That in the event of the receipts of any such article being of importance as a source of revenue, the Governor General in Council will be prepared to consider an application from the Railway Administration interested, for the inclusion of the article into a different class or to its being carried at a differential (or sliding scale) rate.

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* Indian Midland Railway, Bengal Nagpur Railway, Southern Mahratta Railway.

(*e*) "That where an article is carried on the Great Indian Peninsula and the East Indian Railways, at special rates, or, where an article is not included on both these railways in the same class, every railway will be free to classify the article in through booking from time to time as thought desirable. But in such cases where the receipts from such articles are unimportant, the classification adopted by the East Indian Railway should be followed by the State Railways, and the three railways indicated in the margin of clause (*c*) *ante*.

(*f*) "So long as an article is under clauses (*c*), (*d*) or (*e*) included in any of the five classes it will, on the State Railways and on the Railways indicated in clause (*c*) in respect of through booking, be carried at the rates per maund per mile prescribed in the schedule that accompanied Resolution No. 1446 R.T., dated the 12th December 1887.

(*g*) "It will be convenient, whenever the following special (not differential) rates are used on State Railways, that the following nomenclature should be adopted in order to distinguish them—

Class.	Pie per maund per mile
A	$\frac{1}{4}$
B	$\frac{1}{5}$
C	$\frac{1}{6}$
D	$\frac{1}{7}$
E	$\frac{1}{8}$
F	$\frac{1}{9}$
G	$\frac{1}{10}$

"Further orders will be passed regarding the Resolution of the Conference prescribing uniform charges in through booking for certain descriptions of coaching tariff, as soon as it is known how far these proposals are accepted by the Boards of Directors in England, ..."

"In giving these enlarged powers in regard to rates, His Excellency the Governor General in Council trusts that Railway Administrations will realise the necessity of acting on the general principles which are accepted by the Legislature in England, and which the Railway Commissioners in that country are empowered to enforce and will recognise that, in through booking, the various Railway Administrations should serve the country as though they were under one management; and that when there are two alternative routes, the shorter should fix the minimum rate for both routes."

CHAPTER II.

COMPETITION AND COMBINATION AND TRAFFIC AGREEMENTS BETWEEN RAILWAYS.

In this chapter, we are entering into the third period in the history of Indian Railways. New routes and railways encouraged competition between themselves, and the tendency on the part of the railways, which was once to proceed very cautiously in the matter of reductions of railway rates and fares, changed; and in their endeavours to secure or to retain as much business as possible, low rates were quoted both by the old and the new lines. But in each case it did not take very long for both the existing and the newly constructed lines to discover that unlimited and prolonged competition did not profit the parties concerned, as reductions of rates between competitive points, when carried on to extremes, affected the rates and traffic at non-competitive points also.

Therefore, every competition found its limit, and agreements or understandings were come to between railways, by which equal rates by alternative routes, or division of traffic or of traffic earnings or allotments of territories to each route, were settled.

Although generally when competition ends and an agreement is being considered, the desire on the part of the parties concerned is to level up the rates; yet in this connection there are many phases to be considered before enhancements can be made. For instance, when a new route is shorter and the rates in force before its advent were ordinary maximum rates by the older and longer routes, the rates by the shortest route have to be accepted. When, however, a newly introduced route has a longer distance than a former route, the rates on the new route have got to be reduced between the competitive points. And such a reduction has also the tendency to affect the rates between intermediate non-competitive stations. It is not in all cases that the rates of intermediate stations are lowered to the level of those applying between competitive points; nevertheless, in several such cases, rates are rendered cheaper than the maximum rates sometimes to avoid the disparity in rates being very marked, and to prevent re-booking of traffic from competitive areas to intermediate stations; in such latter cases the through rates are made up of a combination of special rates between competitive points and of maximum rates from such points to intermediate stations.

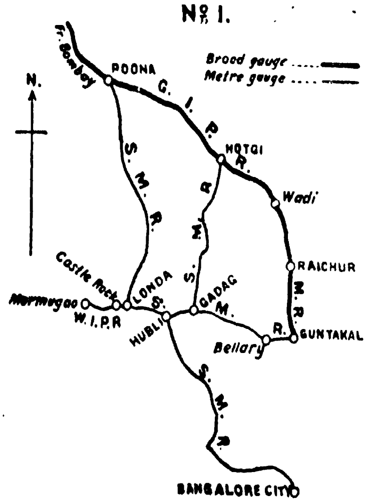
Further, when it is found that low rates during competition have developed traffic, it is seldom the policy of railways to raise rates even when the competition has terminated.

There is, however, one phase in Indian Railway competition, which has the tendency to raise rates in the direction in which the traffic would flow but for (sometimes does flow in spite of) high rates: when a railway finds that it has to give up traffic, originating on its system, to another railway for carriage to a port or to a destination, which gives the former a short but the latter a long lead, the line, on which the traffic originates, charges its maximum rates and highest possible terminals on such traffic either in order to prevent the traffic leaving the railway, after but a short haul, or to make as much out of such traffic as possible.

Now to continue to deal with the developments of each year chronologically.

The total mileage of open lines in India in the beginning of the year 1888 was 4,383 miles

Nº 1.

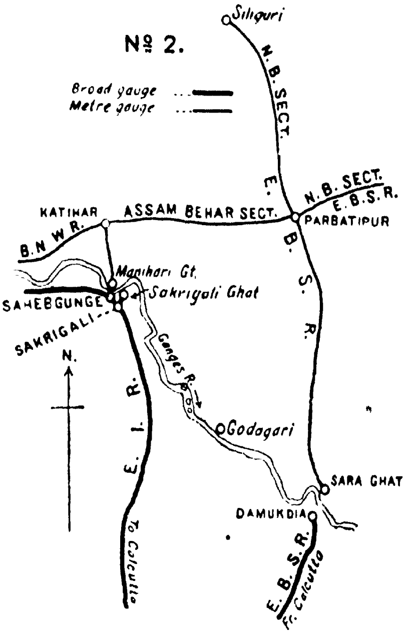


Junction between S. M. and W. I. P. Rys.

The Southern Mahratta Railway and the West of India Portuguese Railway formed a junction at Castle Rock and the line of through communication was now open from the Deccan to the Portuguese port of Mormugao. In 1888 the Southern Mahratta also took over the working of the Guntakul Bezwada line, which was constructed by the State; this included the recently converted section (from broad to metre gauge) from Guntakul to Bellary.

Assam-Behar section of the E. B. S. Ry.

The Assam Behar line from the direction of Parbatipur to Katihar was nearing completion, and the portion partly opened was added to the metre gauge section of the Eastern Bengal State Railway, and it was on the opening of this line that the Bengal and North-Western Railway, which subsequently formed junction with it at Katihar, first thought of an outlet for their traffic *viâ* the Katihar route instead of *viâ* the Mokameh route; the former now offers through communication *viâ* Sara, *i.e.*, this line of communication is not broken by an unbridged river although there is a break of gauge.



This desire on the part of the Bengal and North-Western became strong after the sanction for the opening of the Katihar-Godagari and Ranaghat-Lalgola lines, and the Sara Bridge commission became necessary in 1907 mainly to decide whether there should be a bridge over the Ganges at Rampur Boalia or at the present site, the former position being favoured by the Railway Board in order to give the metre gauge entrance into Calcutta, but the commission decided against it. This commission will be referred to later on when we come to the events of 1907.

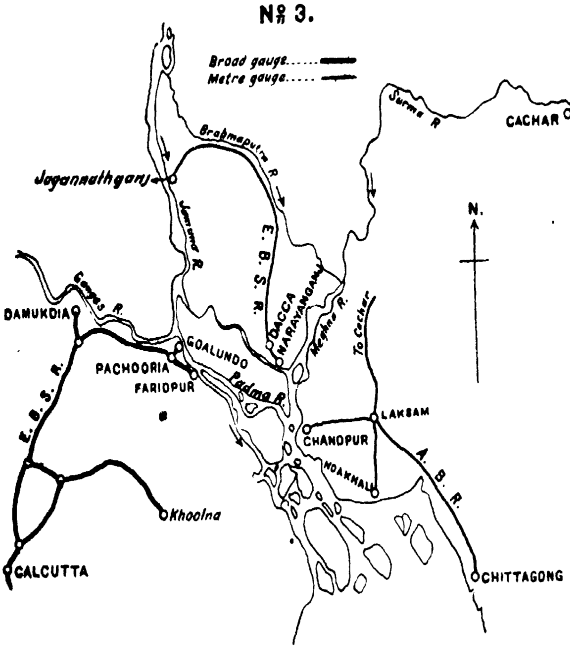
The Eastern Bengal Railway had, for some time past, been running their steamers, in competition with the India General Steam Navigation Company between Goalundo and Narainganj and Goalundo and Cachar. The steamer companies made a representation to the Govern-

Competition between E. B. S. Ry. and the I. G. S. N. Co. for traffic prin-

cipally in jute, between Goalundo and Naraingan] and Goalundo and Chandpur.

ment against railways competing not only for through traffic but for local traffic between steamer stations as well. Finally an agreement was come to dividing the traffic between the railway and the steamer company; it was arranged that the railway was to retain all the traffic (goods and coaching) between Goalundo and Naraingan].

Nº 3.



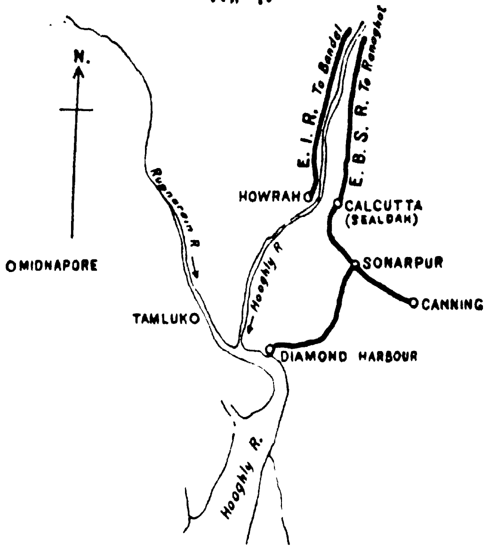
As regards traffic to and from the intermediate riverside stations it was agreed that, in consideration of the steamer company not competing for traffic between Calcutta and Goalundo and Calcutta and Naraingan], and also between Goalundo and Naraingan], which was to be retained by the railway, the earnings by passenger and freight from Goalundo, Cachar ghat (known as Megna Junction) and intermediate stations and *vice versâ* should be pooled and divided equally between the railway and the steamer company, and that the same arrangement was also to apply to traffic of intermediate stations between Goalundo and Naraingan]. These agreements were revised from time to time.

E. B. S. Ry. Steamer Service between

The Eastern Bengal State Railway was also at this time running steamers from Diamond Harbour to Tumlook in Midnapur District over the Hugli and Rupnarain rivers. This traffic now comes within the sphere of the Calcutta Steam Navigation Company and of the Bengal Nagpur Railway.

Diamond Harbour and Tumlook.

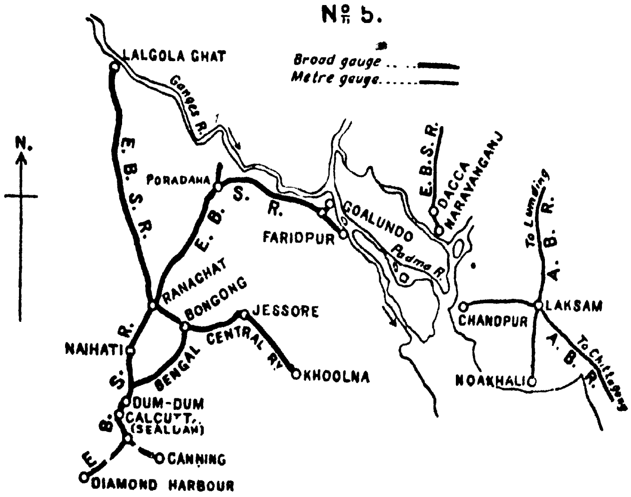
Nº 4.



The Bengal Central Railway from Dum Dum Junction (Calcutta) to Khulna was worked by the Eastern Bengal Railway, and there was

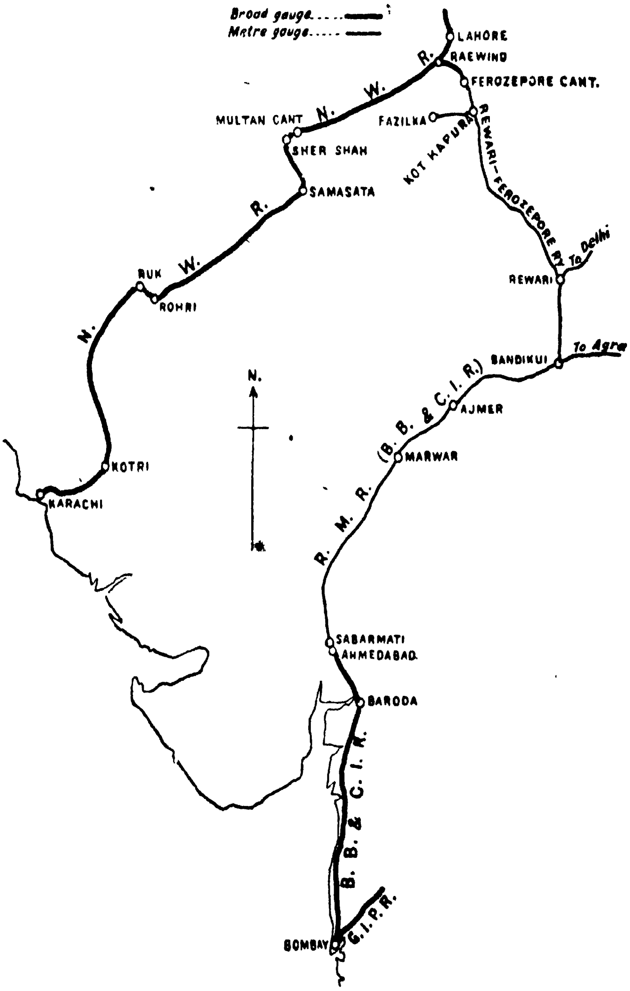
B. C. Ry. competition with E. B. S. Ry. in Chandpur traffic.

Nº 5.



competition for Narainganj and Chandpur traffic between the Bengal Central Railway route *viâ* Khulna and the Eastern Bengal Railway route *viâ* Goalundo. This was one of the reasons why the Bengal Central Railway Company was afterwards taken over by that Company and worked by itself for a few years before being acquired by the State and amalgamated with the Eastern Bengal State Railway.

Nº 9.



[illegible]as however accepted between the Eastern Bengal State Railway and the Bengal Cen[illegible] Railway Company for some time that the latter would be allowed to carry the Calcutta-Chandpur traffic *viâ* Khulna in conjunction with the Steamer Company on the condition that the jute traffic from Narainganj to Calcutta would follow the Goalundo route..

1889. Rates to Kurrachee and Bombay from Rewari-Ferozepur Ry.

The year 1888-89 was memorable for rates competition, and in some cases the position became so acute that through booking *viâ* a new junction was not established although the new line had been opened. This was the case in connection with the Rewari-Ferozepore Railway. The Government of India and the North Western Railway held that Kurrachee being the natural port for export traffic from the Punjab, the rates to Kurrachee from stations nearer that port than Bombay should be cheaper; from equidistant points equal; and at places, from which Kurrachee was at a disadvantage in the matter of distance, equal mileage rates should prevail to both the ports. This position was not accepted by the Bombay, Baroda and Central India Railway for some time, but eventually equal rates for equal distances were accepted. Although the line was opened through, as soon as it was completed, for coaching traffic, the through booking of goods traffic was delayed pending settlement of the dispute.

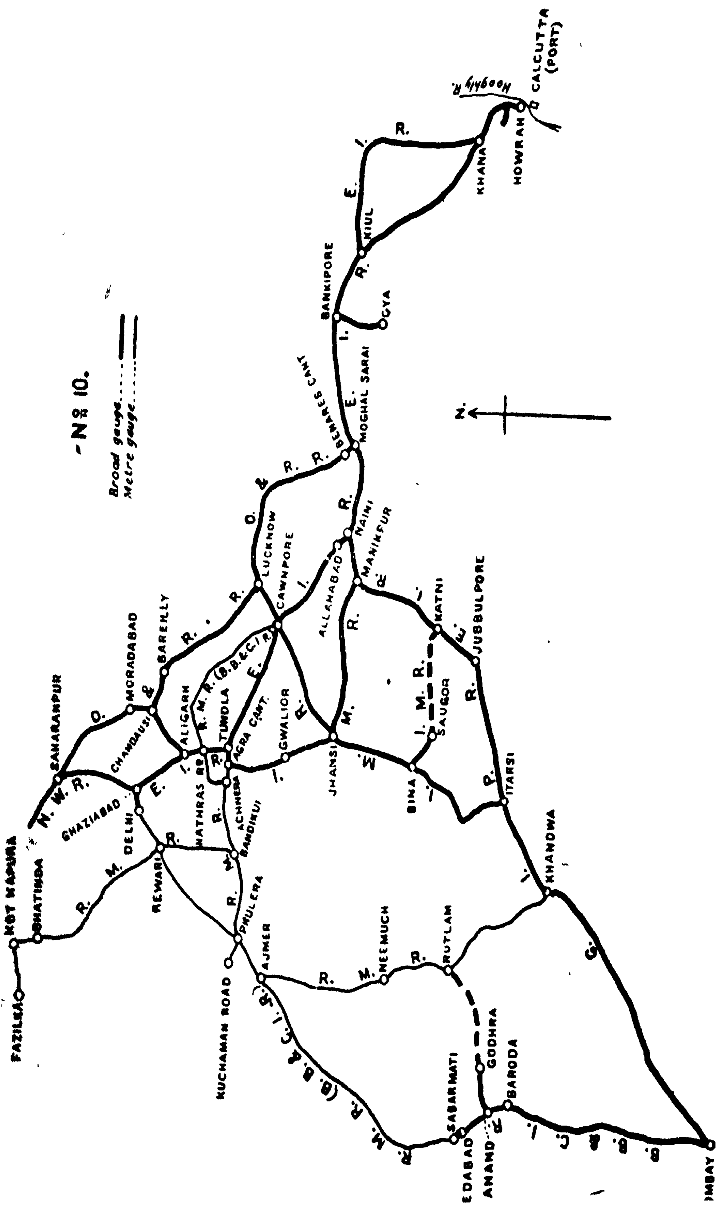
Opening of the I. M. Ry. through to Agra, Cawnpore and Manikpur, and competition between the B., B. and C. I. and the I. M. and G. I. P. Rys. for Bombay traffic and with the E. I. Ry. and the Calcutta port.

The opening of the Indian Midland Railway from Agra to Jhansi, Jhansi to Itarsi and Cawnpore to Jhansi opened out an alternative route for traffic between Northern India and Bombay on broad gauge. The distances from Cawnpore, Agra and Delhi to Bombay were practically the same. By the Indian Midland and Great Indian Peninsula routes (*viâ* Itarsi) the distances from both Cawnpore and Agra to Bombay were 840 miles, and 888 miles was the distance from Delhi to Bombay by the Bombay, Baroda and Central India metre gauge route, and 847 miles was the distance, by this latter route, from Bombay to Agra.

It was anticipated that the opening of the Indian Midland Railway would afford relief to the Ajmere-Ahmedabad section of the Rajputana-Malwa Railway, the traffic on which, it was said, had outgrown its capacity. When the Bombay, Baroda and Central India Railway originally asked for an extension of the broad gauge from Godhra to Rutlam on the Rajputana-Malwa Line, some time before the opening of the Indian Midland Railway, in order that part of the traffic of the Ajmere-Ahmedabad section may be diverted south, from Ajmere to their Neemuch branch and taken over by the broad gauge at Rutlam, the Government decided to defer action in the matter, because it was anticipated that the Indian Midland Railway would take off some of the traffic from the Rajputana-Malwa Railway.

Competition was at once started, on the completion of the Indian Midland Railway, between the Bombay, Baroda and Central India

Railway (including the Rajputana-Malwa Railway) on the one side and



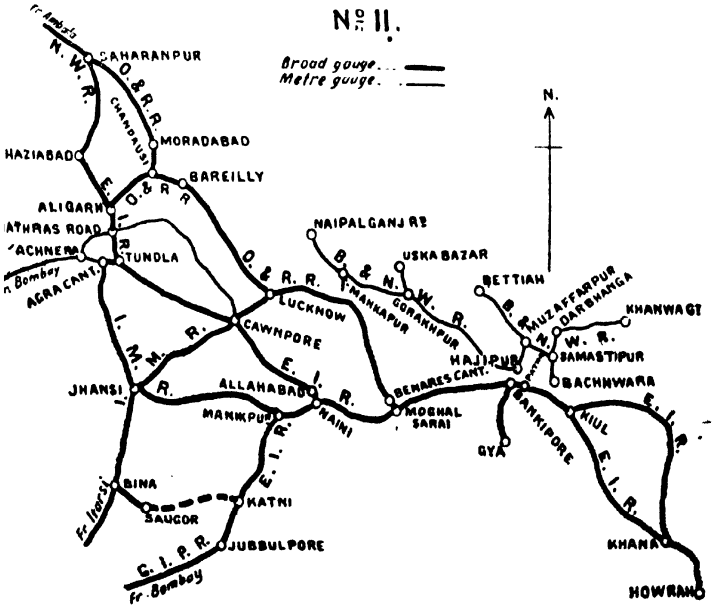
the Indian Midland and Great Indian Peninsula Railways on the other for traffic between :—

Bombay and Agra.
Bombay and Cawnpore.
Bombay and *viâ* Agra (for traffic from the Oudh and Rohilkhand Railway, and East Indian Railway).

Competition also began between the Indian Midland and the East Indian Railways for traffic from the East Indian Railway stations, on the length Etawah to Khaga (including Cawnpore and *viâ* Cawnpore, Oudh and Rohilkhand Railway traffic), to the Great Indian Peninsula Railway. In respect of these stations, the East Indian Railway not only wanted to retain most of the traffic to the Calcutta Port, but also claimed that when the traffic went to Bombay it should continue to follow the Jubbulpore route, and with this object in view, put up the rates from their stations adjacent to Cawnpore, in booking *viâ* Cawnpore, for the Indian Midland Railway.

The reductions that followed the competition for port traffic were heavy, as will be shewn by one or two illustrations regarding the wheat rates. The rate for wheat from Cawnpore to Calcutta was reduced from Re. 0-9-9 per maund to Re. 0-7-8 per maund, in response to the reductions made by the Indian Midland and Great Indian Peninsula Railways in the rate from Cawnpore to Bombay from Re. 0-12-8 to Re. 0-10-9 per maund. It will be seen that the Calcutta Port wanted to maintain a difference of 3 annas per maund, in order to counterbalance

No. 11.



the difference between the ocean freights from Calcutta and Bombay t *Europe. This competition continued for some time.*

The acquisition of the O. and R. Ry. by the State and the settlements of disputes between the O. and R. Ry. and the E. I. Ry. and the B. and N.-W. Rys.

In 1889, the Oudh and Rohilkhand Railway was acquired by the State. The ordinary classification of goods rates then in force on State Railways was introduced on the Oudh and Rohilkhand Railway, in place of "High" and "Low" classification, adopted by the late Company. The classification of goods was assimilated generally with that of the East Indian Railway, and a terminal charge of 3 pies per maund was introduced on traffic carried for distances up to 75 miles, and a rate of ⅛th pie per maund per mile for grain from Oudh and Rohilkhand Railway stations, north and west of Bareilly, to *viâ* Moghalserai for Calcutta.

Simultaneously with the acquisition of the Oudh and Rohilkhand Railway by the State, negotiations were started in order to settle the disputes between the East Indian, the Oudh and Rohilkhand and the Bengal and North-Western Railways and also between the Bengal and North-Western and Oudh and Rohilkhand Railways.

A meeting was consequently held by the representatives of the three railways, and another by the Agents and Traffic Managers of the Oudh and Rohilkhand and East Indian Railways in March 1889 at Moghalserai.

The points in dispute were the following :—

The attempt of the East Indian Railway hitherto was to draw traffic from the Oudh and Rohilkhand Railway at the junctions of Aligarh and Cawnpore, the object being to secure a long lead for their line. But this was directly opposed to the interests of the Oudh and Rohilkhand Railway. The Oudh and Rohilkhand Railway claimed that for traffic originating on their line, and also on traffic to their line, they should be allowed the longest lead. But hitherto the East Indian Railway had not fully recognised this claim although the route *viâ* Moghalserai was the shortest.

Taking the traffic of Chandausi, an important station on the Oudh and Rohilkhand Railway, the distances *viâ* Aligarh and *viâ* the Oudh and Rohilkhand Railway direct to Moghalserai then compared as follows :—

Viâ Oudh and Rohilkhand Railway and the East Indian Railway.		By the Oudh and Rohilkhand Railway direct.	
Oudh and Rohilkhand Railway—Chandausi to Aligarh . . .	61 miles.	Oudh and Rohilkhand Railway—Chandausi to Moghalserai . . .	387 miles.
East Indian Railway—Aligarh to Moghalserai .	407 „		
	468 „		
East Indian Railway—Moghalserai to Cacutta	469 „	East Indian Railway—Moghalserai to Calcutta	469 „
TOTAL .	937 „	TOTAL .	856 „

The Oudh and Rohilkhand Railway objected to give up the traffic to the East Indian Railway at Aligarh, after carrying it for 61 miles only.

It may be argued that it was also reasonable for the East-Indian Railway to claim that although the down traffic in grain might take the Moghalserai route, in order to give the line on which the traffic originated the longest lead, the up traffic, say from Howrah and the East Indian Railway stations, should take the route that gave the East Indian Railway the longest lead. There would be a good deal of force in this argument. But in the agreements between the East Indian and the Oudh and Rohilkhand Railways, between the East Indian and the Bengal and North-Western Railways, and between the Great Indian Peninsula and Southern Mahratta Railways, the route accepted for the export traffic has been adopted for the import traffic as well.*

The next point at issue between the East Indian and the Oudh and Rohilkhand Railways was that, for traffic between the North Western Railway stations north of Saharanpur and the East Indian Railway stations east of Moghalserai, the Oudh and Rohilkhand Railway offered an alternative shorter route as follows :—

Oudh and Rohilkhand Railway, direct route from Saharanpur to Moghalserai		519 miles.
North Western Railway, Saharanpur to Ghaziabad	99 miles.	
East Indian Railway, Ghaziabad to Moghalserai	472 „	
	571 „	

The Oudh and Rohilkhand Railway claimed that the traffic between the North Western Railway north of Saharanpur and the East Indian Railway stations east of Moghalserai should be divided between the Ghaziabad and the Saharanpur routes, but the East Indian Railway did not accept the proposal for a division of the traffic.

While those points were under consideration, the Indian Midland route had been opened from Itarsi to Jhansi, and from Jhansi to Agra and Cawnpore. In competition between this railway and the Bombay, Baroda and Central India Railway, the rates to Bombay for Oudh and Rohilkhand Railway traffic (*viz.*, those of the Bombay, Baroda and Central India Railway from *viâ* Hathras to Bombay ; of the Indian Midland and Great Indian Peninsula Railways from *viâ* Agra to Bombay for the Oudh and Rohilkhand Railway traffic in Rohilkhand reached *viâ* Aligarh ; and the Indian Midland and the Great Indian Peninsula rates from *viâ* Cawnpore to Bombay for the Oudh traffic), had been lowered. This perhaps brought home to the East Indian Railway the fact that the important traffic of the Oudh and Rohilkhand Railway could only be retained by the East Indian Railway and the Calcutta Port with the co-operation of the Oudh and Rohilkhand Railway. The following illustration will explain this statement more clearly :—

If, for instance, traffic from Chandausi to both Bombay and Calcutta took the Aligarh route, and the East Indian Railway insisted

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*** It is generally believed that it is economic to concentrate traffic in both directions *viâ* the same junction as it helps to give loads to wagons in both directions.**

on the traffic being handed over to them at Aligarh for Calcutta, the Oudh and Rohilkhand Railway rate on the distance, Chandausi to Aligarh, would be the same, whether the traffic went to Calcutta or to Bombay. Further, the East Indian Railway lead from Aligarh to Hathras being but 19 miles, and the traffic being cross traffic to the East Indian Railway, they could not levy a higher rate than 9 pies ($\frac{1}{3}$ pie per maund per mile *plus* 3 pies cross traffic charge), and the distance from Hathras to Bombay and from Aligarh to Calcutta being nearly the same, the difference of rates in favour of Calcutta, as compared with the rates to Bombay, would not have been more than Re. 0-0-9 per maund; whereas if the Oudh and Rohilkhand and East Indian Railways both reduced the rates *viâ* Moghalserai they could jointly maintain a much bigger difference in favour of Calcutta.

For Bombay.

	Pies.	
Oudh and Rohilkhand Railway—Chandausi to Aligarh, 61 miles	23	($\frac{1}{3}$ pie per maund per mile *plus* 3 pies terminal.)
East Indian Railway—Aligarh to Hathras, 19 miles	9	($\frac{1}{3}$ pie per maund per mile *plus* 3 pies cross traffic charge.)
Bombay, Baroda and Central India Railway—Hathras to Bombay, 883 miles . . .	88	($\frac{1}{10}$th pie per maund per mile.)
TOTAL .	120	

For Calcutta.

	Pies.
Oudh and Rohilkhand Railway—Chandausi to Aligarh, 61 miles	23
East Indian Railway—Aligarh to Calcutta, 876 miles, the minimum rate	88
TOTAL .	111
Difference in favour of Calcutta . .	9

But if the traffic from Chandausi to Calcutta was routed *viâ* Moghalserai and both the East Indian and the Oudh and Rohilkhand Railways quoted a rate of $\frac{1}{10}$th pie per maund per mile, the through rate to Calcutta would be 86 pies ($\frac{1}{10}$th pie for 856 miles) and the difference in favour of Calcutta would then be 34 pies per maund or Re. 0-2-10 per maund.

120 pies to Bombay.
86 „ to Calcutta.

34 pies or Re. 0-2-10 per maund.

It will thus be seen that it was as much to the interests of the East Indian Railway as of the Oudh and Rohilkhand Railway, that the traffic from the Oudh and Rohilkhand Railway to the Calcutta Port should take the Moghalserai route. It was, therefore, accepted that traffic between the East Indian Railway stations east of Moghalserai and the Oudh and Rohilkhand Railway should not take any other than the Moghalserai route, it however being agreed to that Cawnpore and Aligarh should be treated as East Indian Railway stations, thus implying that the Oudh and Rohilkhand Railway would have no claim on the traffic booked to and from these two junctions; this traffic was to be treated as purely East Indian Railway traffic when intended for any East Indian Railway station east of Moghalserai.

In order to provide against the contingency of such rates being quoted by the East Indian Railway *viâ* Aligarh or *viâ* Cawnpore as would attract the traffic away from the Moghalserai route, it was also conceded by the East Indian Railway that if circumstances required quotation of special rates to Cawnpore or to Aligarh, such rates would not be applied to *viâ* those junctions for traffic to and from the Oudh and Rohilkhand Railway stations. This made the through rates *viâ* Aligarh and *viâ* Cawnpore higher than the local rates, and this was opposed to all recognised practice. But it never had, however, any detrimental effect on the interests of the public, because the endeavour of the two railways has always been to keep the *viâ* Moghalserai route the cheapest, *i.e.*, even though the special rates quoted to Cawnpore and to Aligarh locally do not apply to *viâ* these junctions, the rates maintained *viâ* Moghalserai have always been such as to make the rates by this route cheaper than what the rates *viâ* Aligarh and *viâ* Cawnpore would be if the local rates had been applied in through booking *viâ* these junctions.

The arrangements agreed to in connection with Aligarh and Cawnpore were applied to Saharanpur, *i.e.*, the Oudh and Rohilkhand Railway could not claim "Saharanpur" as their local station.

The next point for settlement was the Punjab traffic, *i.e.*, traffic between the North Western Railway stations north of Saharanpur and the East Indian Railway stations east of Moghalserai. It was accepted that the rates *viâ* Moghalserai and *viâ* Ghaziabad should be the same, and the matter rested there. The Oudh and Rohilkhand Railway asked for the pooling of the traffic, but the East Indian Railway said that with equal rates, no pooling was necessary. The Oudh and Rohilkhand Railway simply recorded, that they regretted the view taken by the East Indian Railway, but it was nowhere recorded that the Oudh and Rohilkhand Railway agreed in 1889 to this traffic being carried entirely by the East Indian Railway.

As to all other traffic between the East Indian and the Oudh and Rohilkhand Railways it was agreed that the shortest route would carry the traffic.

At the time that the dispute between the Oudh and Rohilkhand and East Indian Railways was settled, it was also settled between the

East Indian, the Bengal and North-Western and the Oudh and Rohilkhand Railways :—

1. That rates to Calcutta from stations on the Bengal and North-Western Railway, corresponding to those on the Oudh and Rohilkhand Railway, should be the same, the Bengal and North-Western Railway traffic of course being interchanged between the East Indian and the Bengal and North-Western Railways at Dighaghat.

2. In regard to the rates for Salt, it was accepted that between the three railways, the rates for Sambhar and Kharagoda Salt should be on the following basis :—

Below 288 miles—⅙th pie per maund per mile,
Over 288 miles—⅛th pie per maund per mile,

plus a terminal of Rs. 1-8-0 per 100 maunds to the railway which got a lead of less than 75 miles, the through rates arrived at on the above scale (without the terminal) being divisible on mileage.

3. It was also provided that in the event of any reduction in the rate to be made by the East Indian Railway between Patna and Calcutta, in competition with the steamers, 14 days' notice would have to be given to the Bengal and North-Western Railway.

4. An arrangement was also made between the Oudh and Rohilkhand Railway, the East Indian Railway and the Bengal and North-Western Railway, as to Tirhoot traffic for Cawnpore and west thereof. (The Tirhoot State Railway had not up to this time been amalgamated with the Bengal and North-Western Railway.) The understanding was that the East Indian Railway was to equalise rates for the Tirhoot traffic for Cawnpore and the west, so that the rates *viâ* Digha and the East Indian Railway would be equal to those by the Bengal and North-Western Railway and the Oudh and Rohilkhand Railway *viâ* Ajodhyaghat.

Thus the long standing disputes between the East Indian and the Bengal and North-Western Railways were amicably settled.

Competition between the E. I. and the I. M. Rys. for Bombay traffic.

The East Indian Railway had started competition for Bombay traffic from stations on the length Khaga to Etawah. Taking Etawah, Fatehpur and Khaga, the distances to Bombay *viâ* Itarsi and *viâ* Jubbulpur compare as follows :—

	Viâ Agra and Itarsi.	*Viâ* Jubbulpur.
Etawah	911 miles.	1,050 miles.
	Viâ Cawnpore and Itarsi.	
Fatehpur . .	47+840=887 miles.	917 miles.
Khaga . .	69+840=909 „	896 „

This competition continued for more than a year.

Unsuccessful effort on the part of the E. I. Ry. to draw traffic in wheat from the Central

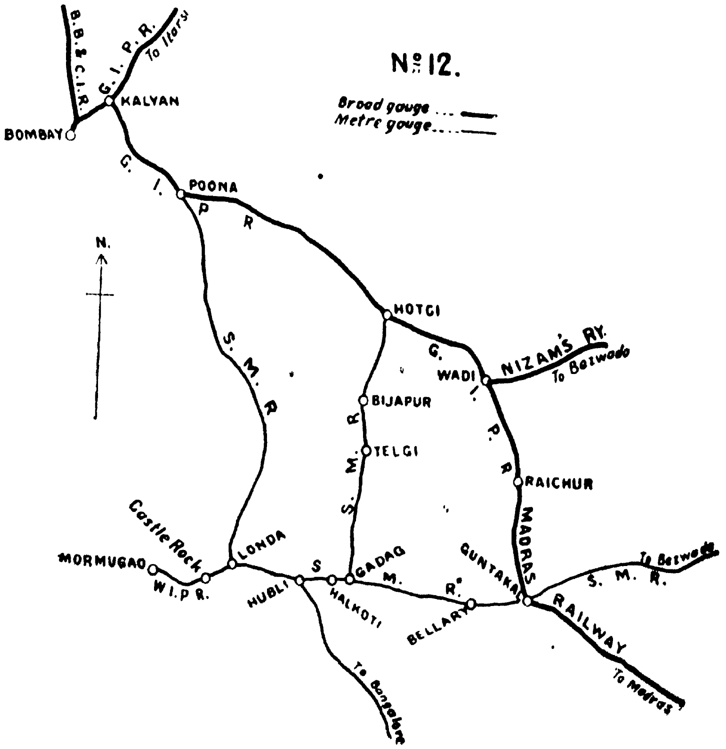
The East Indian Railway also made an effort to draw the wheat traffic from their Jubbulpur branch line stations to Calcutta, as this traffic was seeking its outlet by the port of Bombay, the principal despatching station being Sihora, in the Central Provinces, 25 miles from Jubbulpur, 759 from Howrah, and 641 from Bombay. The railway

Provinces near Jubbulpur to Calcutta.

charges from this place were about 5 shillings per ton in favour of Calcutta, which were again reduced by 2*s.* 3*d.* per ton, or the difference in favour of Calcutta was 7*s.* 3*d.* per ton (or the difference per maund was nearly Re. 0-2-9); but even this failed to secure the traffic to Calcutta. For many years the difference that was required to divert the traffic from the Bombay to the Calcutta port was more than Re. 0-3-0 per maund, but not greater than Re. 0-3-6 to 4 annas per maund.

Difficulties in the carriage of jute from East Bengal to Calcutta.

A new difficulty had to be faced by the Eastern Bengal State Railway in connection with the traffic in jute for consumption in the mills near Calcutta. The inability of the railway to deal with the traffic adequately induced the Mill Directors to consider the advisability of constructing their own fleet of river flats, but an arrangement was made between the River Steamer Companies and the Mill Directors, by which jute for the Mills was secured to the former, from the riverside stations where there were no railways; and also as to traffic carried by the Railway *viâ* Goalundo, so far as the river carriage was concerned, such traffic was to be carried in the steamers of the Steamer Companies, (and not of the Eastern Bengal State Railway), and the earnings were to go to the Steamer Companies so far as the steamer charges were concerned, except for Naraingani traffic.



Agreement between the S. M. and the G. I. P. Rys. for traffic between S. M. Ry. stations and Bombay.

The Southern Mahratta Railway was now open for traffic and junctions had been formed with the Great Indian Peninsula Railway at Hotgi and at Poona. The route to Murmagao was also open.

In August 1889, an agreement was come to between the Great Indian Peninsula and the Southern Mahratta Railways, so far as these two railways were concerned, without taking the West of India Portuguese Railway into account, in the matter of division of traffic, although the Southern Mahratta Railway applied their scale of rates *viâ* Castle Rock, the junction with the West of India Portuguese Railway. The terms of the agreement were as follows :—

(*a*) All goods traffic between the Bombay stations of the Great India Peninsula Railway and stations on the Southern Mahratta Railway, was to be interchanged as between the two railways either *viâ* Hotgi or *viâ* Poona only (*i.e.*, the route *viâ* Raichur and Guntakul was not to be taken into account for traffic between Bombay and internal stations of the Southern Mahratta Railway), although it may be noted that the Raichur-Guntakul route was the shortest for stations on the Guntakul Bellary section.

(*b*) As between the Hotgi and the Poona routes, it was agreed that goods carried between Bombay and any Southern Mahratta Railway station west and south of Halkoti, and also stations on the Poona branch was to be interchanged at Poona ; and the traffic to and from any station of the Southern Mahratta Railway east of and including Halkoti, and stations on the Hotgi branch (known as the Bijapur branch) was to be routed *viâ* Hotgi.

This allotment was on the basis of the shortest route. Halkoti was the equidistant and also the dividing point; the distances from Halkoti to Bombay *viâ* Poona and *viâ* Hotgi are as follows :—

	Viâ Poona	*Viâ* Hotgi.
	miles.	miles.
Great Indian Peninsula Railway . .	119	292
Southern Mahratta Railway . . .	362	188
TOTAL .	481	480

(*c*) The Southern Mahratta Railway also accepted that the rates between Bombay and Guntakul were to be so adjusted *viâ* Hotgi that the goods booked between Bombay and the Madras Railway stations were not to be diverted from the direct broad gauge route *viâ* Raichur to the Southern Mahratta Railway route *viâ* Poona or *viâ* Hotgi.

(*d*) Another important feature of the arrangement was that the rates for all the classes were to be fixed on a sliding scale of rates, applicable on through distances between Bombay and the Southern Mahratta Railway stations. The rates for each station, arrived at according to this scale, were divisible on mileage proportion between the two railways, and a terminal of 3 pies per maund for each railway was to be added to the rates.

(*e*) In the matter of fixing of rates in special cases, from time to time, the railway having the largest share of the shortest route was to fix the through rates.

(*f*) In regard to traffic between the Southern Mahratta and the Great Indian Peninsula Railway stations (other than traffic to and from Bombay), the shorter route was to be adopted, which was also to be made the cheapest, if not so already.

1890.

Among the principal events which occurred in 1890-91, was the purchase by the State, on 1st January 1891, of the South Indian Guaranteed Railway; but the working was made over to a new company, known as the South Indian Railway Company.

The working of the Tirhoot State Railway was transferred to the Bengal and North-Western Railway Company from 1st July 1890, and from 1st January 1891, the working of the Lucknow-Sitapur-Bareilly Railway, also a State Railway, on metre gauge, was transferred from the Oudh and Rohilkhand Railway to the Rohilkund and Kumaon Railway Company.

It is now to the interest of the Bengal and North-Western Railway to make over their traffic to the East Indian Railway for Calcutta at Mokamehghat, instead of at Dighaghat, so as to secure a better lead on the system of the Bengal and North-Western and the Tirhoot State Railways, and, similarly, in the case of the Rohilkund and Kumaon Railway Company, now working the Lucknow-Sitapur-Bareilly Railway, it was to their interest that the traffic of their Bareilly-Kathgodam section, for stations east of Lucknow and *vice versâ*, was made over to the Oudh and Rohilkhand Railway at Lucknow instead of at Bareilly, thus involving a loss of lead to the East Indian Railway and the Oudh and Rohilkhand Railway respectively.

Competition between the E. I. and the I. M. Rys., due to the opening of the I. M. Ry., ending in settlements.

The competition between the East Indian and the Indian Midland Railways continued, involving reductions in the rates to Calcutta and Bombay from Cawnpore and Agra and from places served *viâ* these junctions on the East Indian and Oudh and Rohilkhand Railways. The East Indian Railway put up their rates to junctions with the Bombay lines. The high rates over the East Indian Railway were however subsequently withdrawn, in so far as they applied to the particular junctions with the Bombay lines, and later on an agreement was made between the East Indian, the Great Indian Peninsula and the Indian Midland Railways.

It is to be remembered that at this time the Indian Midland Railway had not had direct access to Delhi (the Agra-Delhi Chord Railway not then being in existence), and therefore, in competition with the Bombay, Baroda and Central India and the Rajputana Malwa Railways on the one hand, and the Great Indian Peninsula and the Indian Midland Railways on the other, in respect of traffic between Delhi and *viâ* and Bombay, the latter two lines required the help of the East Indian Railway. Therefore, an amicable settlement was come to between these lines in 1892, the terms of which, briefly summarised, were as follows :—

(*a*) That through rates were to be quoted between Bombay and Delhi *viâ* Agra, divisible in mileage proportion between the East Indian, the Indian Midland and the Great Indian Peninsula Railways, in competition with the Bombay, Baroda and Central India Railway rates.

(*b*) That the traffic between Cawnpore and Bombay was to be divided between the Jubbulpur and the Itarsi routes, and that equal rates were to be maintained. The Itarsi route was to get $\frac{9}{16}$ths and the Jubbulpur route $\frac{7}{16}$ths.

(*c*) That for traffic between Stations Khaga to Etawah on the East Indian Railway and Bombay, equal rates were also to be charged, and the traffic was to be divided in equal proportions between the Jubbulpur and the Itarsi routes.

(*d*) Equal rates were also agreed to for traffic between Cawnpore and *viâ* and stations on the Great Indian Peninsula Railway beyond Itarsi (*i.e.*, west and south of Itarsi) by the East Indian Railway route *viâ* Jubbulpur with those in force *viâ* the Indian Midland route *viâ* Itarsi.

That the East Indian Railway had quoted certain rates in excess of the maximum, for "special class" rates were admitted, *vide* the following remarks in their report, reproduced in the Government of India Administration Report for Railways for 1890-91 (page 122, Part I) :—

"Certain rates in excess had been imposed on special class traffic, in order to minimise the effects of competition in diverting traffic, which were withdrawn with effect from 1st January 1891."

Combination between E. I., G. I. P. and I. M. Rys. resulting in competition with the B., B. and C. I. Ry.

As a result of the combination between the East Indian, the Indian Midland and the Great Indian Peninsula Railways, competition was renewed with the Bombay, Baroda and Central India Railway for traffic between Cawnpore and Bombay, and Delhi and *viâ* and Bombay, and also between Hathras and *viâ* and Bombay and *viâ* Agra and Bombay. The traffic between Agra and Bombay was already divided equally between the Great Indian Peninsula and the Indian Midland Railways on the one side controlling the broad gauge route, and the Rajputana-Malwa Railway and Bombay, Baroda and Central India Railway on the other.

1891-92.

The year 1891-92 was marked by the opening of the Bengal-Nagpur Railway for traffic from Nagpur to Bilaspur and Bilaspur to Asansol; and the Delhi-Umbala-Kalka Railway was also opened at the same time. It connected Delhi with Kalka, at the foot of the Himalayas, *viâ* Umbala.

1891-92.

The working of the Delhi-Umballa-Kalka Railway was made over to the Secretary of State by the Delhi-Umballa-Kalka Railway Company, and the Secretary of State in his turn gave its working to the East Indian Railway; but it was specially provided that the Delhi-Umballa-Kalka Railway would not give undue preference to any railway route. This clause was inserted in the contract at the request of the Bombay, Baroda and Central India Railway, by whom it was held that in the absence of a provision of this nature, the East Indian Railway, the working company of the Delhi-Umballa-Kalka Railway, might quote rates over the Delhi-Umballa-Kalka Railway between stations on that line and Delhi, cheaper for the East Indian Railway (particularly for Calcutta traffic) than for the Bombay, Baroda and Central India Railway (for instance for Bombay traffic).

Introduction of maxima and minima rates over Indian Rys. generally.

The maxima and minima rates referred to in the concluding portion of Chapter I, as well as the Standard Classification for goods traffic, based on the classification of the East Indian Railway, were now in force on the East Indian Railway, on all the State lines, the Bengal Nagpur, the Bengal and North-Western and the Rohilkund and Kumaon Railways. The same maxima and minima rates were also adopted for the South Indian and the Southern Mahratta Railways with this difference, that the former line was allowed to adopt the classification of the Madras Railway for purposes of simplification and uniformity of classification in Southern India. The Southern Mahratta line was also permitted to retain the classification that was then in force on that line, which was practically the Great Indian Peninsula Railway classification with certain modifications. It will thus be seen that while all the Northern lines (including the Rajputana-Malwa and the Indian Midland Railways) accepted the East Indian Railway classification, the Southern and Western lines (including the broad gauge portion of the Bombay, Baroda and Central India Railway) had a different classification.

The maxima and minima rates referred to are reproduced here for ready reference :—

	Maximum pie per mile.	Minimum pie per mile.
Special Class	⅓	1/10
1st Class	⅜	⅙
2nd Class	½	⅙
3rd Class	⅔	⅙
4th Class	⅚	⅙
5th Class	1	⅙

Passenger fares for the lowest classes.

In the year 1891-92 the lowest class fares on the important lines were as follows :—

	Pies per mile.
On the East Indian Railway . .	2½
On the Bengal Nagpur Railway . .	2
On the Bombay, Baroda and Central India Railway including the Rajputana-Malwa Railway . . .	2½ by mail 1½ by ordinary train.

	Pies per mile.
On the Bengal and North-Western Railway proper	2
On the Tirhoot Railway . . .	1¾
Rohilkund and Kumaon Railway .	2
Southern Mahratta Railway . .	2
South Indian Railway . . .	2
North Western Railway . . .	2½ 2¼ 2
Oudh and Rohilkhand Railway .	2½ (The fare charged by this line when worked by the Company was 2 pies.)
Eastern Bengal State Railway . .	2½
Great Indian Peninsula Railway . .	3 by mail train. 2½ by passenger.
Madras Railway	2½ by mail train. 1½ by passenger.

1891-92. Opening of the B. N. Ry. through to Asansol from Nagpur and quotation of low rates to Calcutta.

The opening of the Bengal Nagpur Railway to Asansol placed the productions of the Central Provinces within the reach of the Calcutta buyers. It was to the interest of the Bengal Nagpur Railway to establish the traffic to the Calcutta port, but as they had not yet obtained direct entrance into Calcutta, they had to seek the co-operation of the East Indian Railway on the length Asansol to Calcutta, and it must be said that the East Indian Railway gave the Bengal Nagpur Railway very substantial assistance.

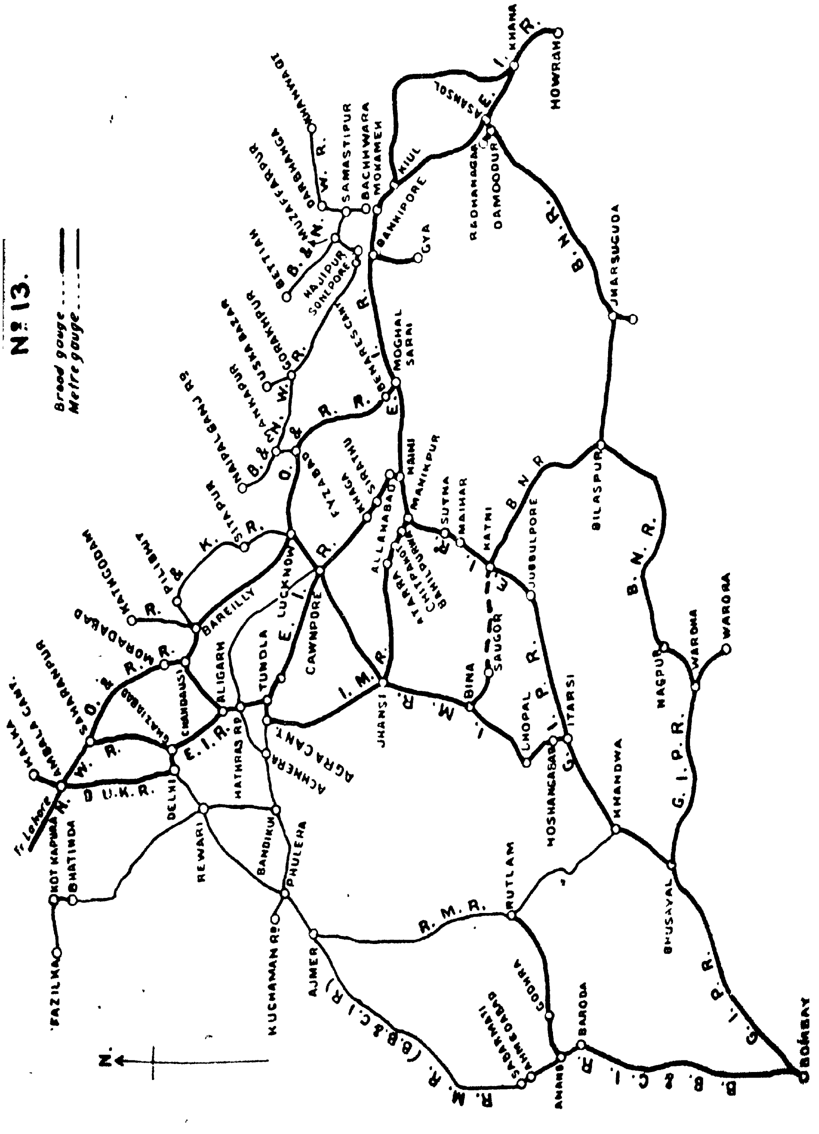
The distances from some of the important grain despatching stations on the Bengal Nagpur Railway (in the Central Provinces) to Calcutta and Bombay compared as follows :—

—	To Calcutta *viâ* Asansol.			To Bombay *viâ* Nagpur.		
	B. N. R.	E. I. R.	Total.	B. N. R.	G. I. P. R.	Total.
Nagpur . .	632	132	764	..	520	520
Drug . .	467	132	599	165	520	685
Rajnandgaon .	486	132	618	146	520	666
Raipur . .	444	132	576	188	520	708
Bilaspur . .	376	132	508	257	520	777
Akaltara .	359	132	491	273	520	793
Raigarh . .	293	132	425	339	520	859

It will be seen that the Bengal Nagpur Railway was interested in carrying the traffic to Calcutta, and for long distance traffic from stations near Nagpur, they went so far as to quote nearly the minimum rate (*viz.*, ⅛th pie per maund per mile) to Asansol.

Another important competitive traffic was Jagree (Gur) and Sugar traffic from the Oudh and Rohilkhand and the Bengal and North-Western Railways. The quantity of "Gur" despatched from the districts in Oudh to Rajputana, Central India, the Central Provinces and the Berars was large. There was no imported sugar competing with it in those days. For traffic to Rajputana and to Central India, there was competition between the Bombay, Baroda and Central India, the

1891-92. Competition for jagree traffic from the O. and R. and B. and N.-W. Rys. to Rajputana Central India and Central Provinces.



1891-92. East Indian, the Indian Midland and the Great Indian Peninsula Railways, the competitive points being between (1) Cawnpore and Agra for Rajputana and (2) Cawnpore and Khandwa for Central India. The East Indian Railway and the Bombay, Baroda and Central India Railway were interested in the former and the Indian Midland, the Great Indian Peninsula, the Bombay, Baroda and Central India, and the East Indian Railways in the latter. The competition continued till 1895, when an arrangement was made between the lines concerned, which will be referred to later on.

There was also competition between Cawnpore and Itarsi, between the Indian Midland and the East Indian Railways for traffic in Sugar and Jagree to the Nagpur branch of the Great Indian Peninsula Railway.

The Indian Midland and the East Indian Railways had also another dispute in regard to Jagree traffic, for despatches from the East Indian Railway stations, between Moghalserai and Mokamehghat, to the Indian Midland Railway stations, between Bhopal and Hoshangabad. While the East Indian Railway wanted to take the traffic to Jubbulpur, to be carried by the Great Indian Peninsula Railway to Itarsi, and then made over to the Indian Midland Railway, to be hauled for short distances only, the Indian Midland Railway wanted this traffic at Manikpur Junction; but this meant a loss of over 150 miles in lead to the East Indian Railway. Taking Manikpur, the point of diversion between the Jubbulpur and the Indian Midland routes, the distances to Bhopal and Hoshangabad were as follows :—

	East Indian Railway *viâ* Jubbulpur.	Indian Midland Railway *viâ* Jhansi.
	Miles.	Miles.
Manikpur to Bhopal . . .	377	362
Manikpur to Hoshangabad . .	331	408

While the Jubbulpur route was longer than the shortest for Bhopal by 15 miles only, Jubbulpur route was the shortest for Hoshangabad; and as the traffic originated on the East Indian Railway, they wanted to carry it to Jubbulpur, *i.e.*, for the longest distance possible. The Indian Midland Railway in order to attract the traffic to the Manikpur route, quoted a rate of Re. 0-8-9 per maund from Manikpur to Hoshangabad for a distance of 408 miles, whereas their rate from Manikpur to Bhopal was 10 annas for a distance of only 362 miles. Although these rates were introduced in competition, it was pointed out by the Government of India that the rates constituted undue preference.

The Bengal Nagpur Railway connection with the East Indian Railway at Katni opened up an alternative route for traffic between Katni and Calcutta, and also for traffic from the North Western Provinces and Oudh (particularly from Cawnpore and stations on the Oudh and Rohilkhand Railway reached *viâ* Cawnpore) to the Central Provinces, to the routes by the Indian Midland and the Great Indian

1891-92

Peninsula Railways *viâ* Itarsi, and of the East Indian and the Great Indian Peninsula Railways *viâ* Jubbulpur. The Bengal Nagpur Railway route *viâ* Katni was the shortest for all Bengal Nagpur Railway stations up to Nagpur, and for a few stations beyond Nagpur on the Great Indian Peninsula Railway, up to say Wardha ; and competition lowered down the rates for jagree, which was the principal item of traffic, to the level of special rates for grain.

The distances from Cawnpore to Nagpur by the competing routes were as follows :—

	Miles.
(1) *Viâ* Jhansi and Itarsi over the Indian Midland Railway and the Great Indian Peninsula Railway . . .	806
(2) *Viâ* Katni over the East Indian Railway and the Bengal Nagpur Railway	745

The Bengal Nagpur Railway route *viâ* Katni was shorter by 61 miles.

Competition continued for quite a number of years. The matter was not finally settled till 1898, when the issues became more complicated, by the opening of the Indian Midland Railway route from Bina to Katni. An agreement was then come to between the railways concerned ; this agreement will be referred to and discussed along with the events of the year 1898. When the Itarsi-Nagpur Railway, now under construction, is open throughout, the question will come up again for discussion, but with the introduction of foreign sugar into this country the bulk of the traffic, which previously used to be in dispute, has disappeared.

Development of timber and coal traffic on the opening of the B. N. Ry.

Another important traffic that was developed by the opening of the Bengal Nagpur Railway was the timber traffic, which began increasing rapidly. This line placed the rich forest tracts, abundant in Sal timber, lying contiguous to the line, within easy access of markets. The rate charged was $\frac{1}{6}$th pie per maund per mile over the Bengal Nagpur Railway, and later on the rate was further reduced to $\frac{1}{8}$th pie per maund per mile for distances of beyond 400 miles.

The Bengal Nagpur Railway had built a branch from their Damudar station, a few miles west of Asansol, to Radhanagar, to serve the Sanctoria Coal Fields, which sent its raisings to Calcutta, whereby the East Indian Railway was more benefited, owing to its lead of 132 miles from Asansol to Calcutta, than the Bengal Nagpur Railway who only got a short haul of less than 25 miles.

Now to refer to the circumstances which necessitated a settlement between the East Indian Railway, as the working agency of Delhi-Umballa-Kalka Railway, and the North Western Railway, after the opening of the Delhi-Umballa-Kalka Railway.

Settlement between E. I. and N. W. Rys. for traffic between the Punjab and

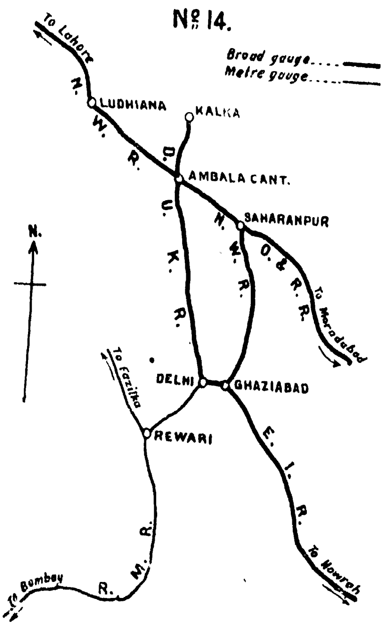
Prior to the opening of the Delhi-Umballa-Kalka Railway, the traffic from the North Western Railway to stations south of Ghaziabad (*viz.*, to the East Indian Railway) and to Delhi and *viâ* Delhi (for the Bombay, Baroda and Central India Railway) was carried by the North Western

Delhi and vià on the pening of K. Ry.

Railway *viâ* Ghaziabad. There were only 3 lines then running into Delhi, *viz.*, the East Indian and the North Western from the east and north respectively and the Bombay, Baroda and Central India Railway from the west. But with the opening of the Delhi-Amballa-Kalka Railway, the distance between Delhi and Amballa was shortened by the Delhi-Amballa-Kalka Railway route as follows :—

		Miles.
I.	Amballa to Ghaziabad (by the North Western Railway *viâ* Saharanpur and Meerut)	154
	Amballa to Ghaziabad (by the Delhi-Amballa-Kalka and East Indian Railways)	136
II.	Amballa to Delhi (by the old route over the North Western Railway *viâ* Ghaziabad)	167
	Amballa to Delhi (by the Delhi-Amballa-Kalka Railway new route)	123

No. 14.



A meeting was held between the representatives of the East Indian and the North Western Railways at Amballa, on 2nd May 1892, and after discussion, the following settlement was arrived at :—

(*a*) All traffic from stations between Ludhiana and Amballa (including both the stations) to Delhi and *viâ* Delhi for the Bombay, Baroda and Central India Railway was to be carried by the Delhi-Amballa-Kalka Railway, which route was also to have the cheapest rates. This arrangement also applied to traffic in the reverse direction.

(*b*) All traffic between stations north of Ludhiana on the North Western Railway and Delhi and *viâ* Delhi (for the Bombay, Baroda and Central India Railway) was to be carried by the North Western Railway—the rates being equal by both the routes.

(*c*) Traffic to and from Amballa Cantonment and north of Amballa to and from the East Indian Railway stations and *viâ*, south and east of Ghaziabad—equal rates by both the routes.

*This agreement remained in force till the opening of alternative routes, by the Southern Panjab and the Ludhiana-Dhuri-Jakhal Railways, some years later when it was revised.

1892. Agreement between O. and R. and R. and K. Rys. for traffic between Bareilly and Lucknow.

The taking over of the Lucknow-Sitapur-Bareilly Railway by the Rohilkund and Kumaon Railway opened a through route up to Lucknow, for traffic between the Rohilkund and Kumaon Railway proper (*viz.*, to and from stations on the Bareilly-Kathgodam and Bareilly-Pilibhit Sections) and stations west and south of Lucknow on the Oudh and Rohilkhand Railway (including the important potato and rice traffic from the Rohilkund and Kumaon Railway to Calcutta and up traffic in imported goods to the Kumaon hills). Hitherto, such traffic was interchanged between the Oudh and Rohilkhand and the Rohilkund and Kumaon Railways at Bareilly junction. The question of charges by the alternative routes was amicably settled between the Oudh and Rohilkhand and the Rohilkund and Kumaon Railways. An agreement was drawn up regarding the equalisation of rates *viâ* Bareilly and *viâ* Lucknow, for goods to or from stations east or south of Lucknow; and this prevented competitive rates being quoted by either line. The distances between the competing points were as follows:—

	Viâ Rohilkund and Kumaon, Bareilly and Oudh and Rohilkhand Railway.	*Viâ* the Rohilkund and Kumaon Railway and Lucknow-Sitapur Railway.
	Miles.	Miles.
Kathgodam to Lucknow	212	241
Pilibhit to Lucknow	182	163

I. M. Ry. running powers into Tundla.

An agreement was executed in 1892 between the East Indian and the Indian Midland Railways, in terms of which the latter line got permission to run and haul their coaching trains between Agra and Tundla, over the line of the East Indian Railway, in consideration of the Indian Midland paying to the East Indian Railway 80 per cent. of its gross earnings for 14 miles between Agra and Tundla.

Competition between river side stations of broad and metre gauge south and north of the Ganges respectively.

The Bengal and North-Western and the Tirhoot Railways (combined) now ran from Khanwaghat to Naipalganj, with a branch from Gonda to Byramghat on the north bank of the Ganges and Gogra, parallel to the East Indian and the Oudh and Rohilkhand Railways south of the Ganges and Gogra, from Sahebganj to Byramghat; and the Assam-Bihar section now being open, a junction was formed between the

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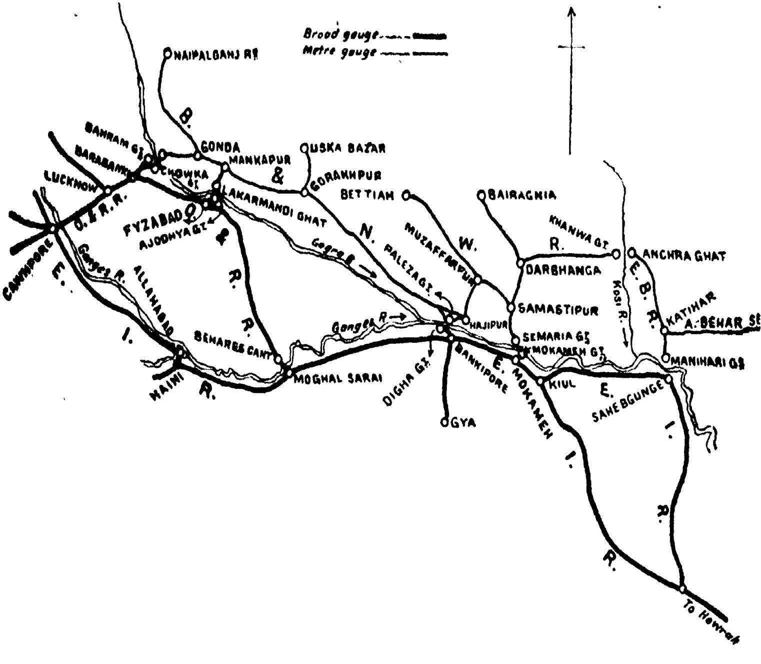
* For the revised agreement see page 158.

1898.

Bengal and North-Western Railway and the **Eastern Bengal State Railway** by means of a ferry across the river Kosi, the Eastern Bengal State Railway station on the left bank being Anchraghat, which was opposite the Bengal and North-Western Railway station Khanwaghat, on the right bank of the river Kosi. Competition began between the metre gauge systems on the north of the river and the broad gauge systems on the south, for traffic from river stations to river stations, *viz.*, between—

Sahebganj	and
Mokamehghat	Maniharighat
Dighaghat	Samariaghat
Ajodhyaghat, and	Palezaghat
Byramghat	Lakarmandighat and
on the broad gauge,	Chaukaghat
	on the metre gauge.

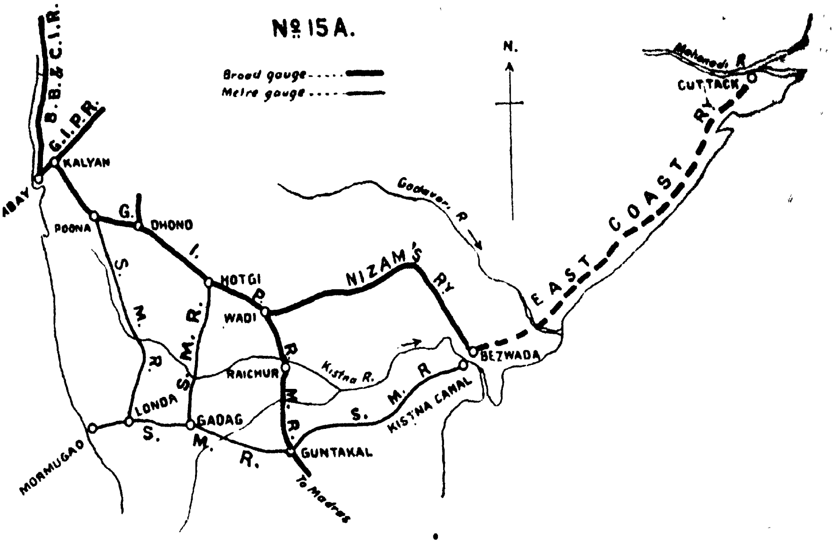
No. 15



Competition between the N. G. S. and the S. M. Ry.

The Nizam's guaranteed line (5′ 6″ gauge) was now open from Wadi to Bezwada, on the river Krishna, and the Southern Mahratta (metre gauge) had reached the opposite bank and had their terminus at a place called by the name of the river Krishna, which was not bridged till the East Coast Railway from Bezwada to Cuttack came into existence

A connection between the two lines was not formed till the East Coast came in. But nevertheless, competition for traffic from the eastern sections of the Southern Mahratta and the Nizam's lines to the Great Indian Peninsula Railway southern line and to Bombay, had already started between the Nizam's Guaranteed State and the Southern Mahratta Railways. 1892.



The Kidderpore Docks in Calcutta were completed in 1892, and agreements were entered into between the Commissioners of the Port of Calcutta and the East Indian Railway, and also between them and the Eastern Bengal State Railway, for the shipment traffic of both the lines being dealt with at these Docks. *Extension of Calcutta terminal facilities—Kidderpore Docks.*

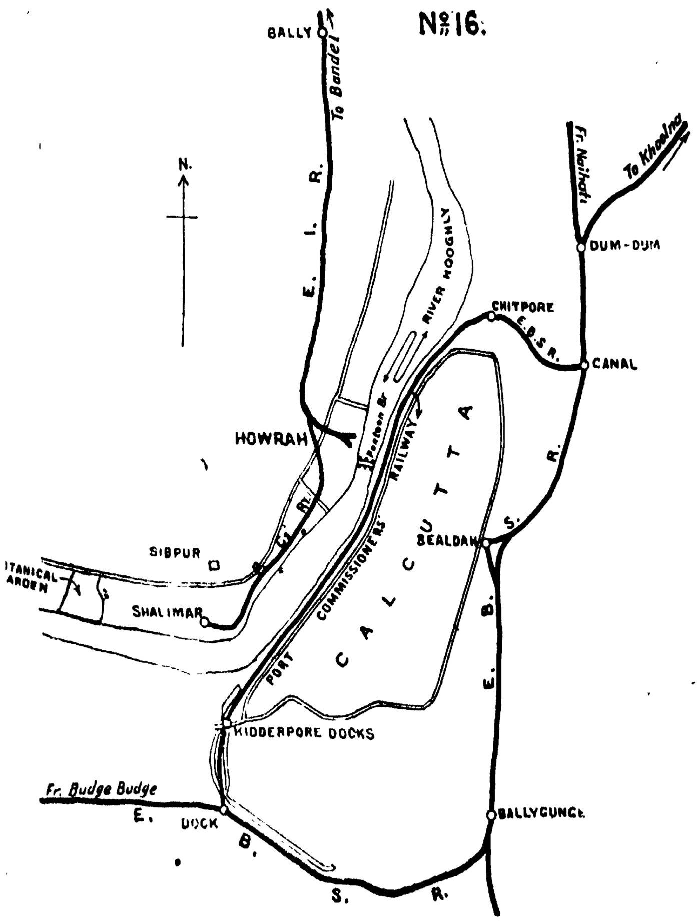
Before the Docks came into existence, the Secretary of State for India had given assent to a concession, that in order to encourage bookings to the Docks, the rates from all up country stations on the East Indian Railway (*i.e.*, north-west of Hugli), should be the same as to Howrah, in spite of the fact that the East Indian Railway had to pay to the Eastern Bengal State Railway for running powers between Naihati and the Docks.

The services to be performed by the Commissioners were as follows:—

(1) The provision of necessary accommodation for receiving, standing and forwarding East Indian Railway trains; and of accommodating the staff required in the working of the same, *viz.*, all conveniences, buildings, machinery, sidings, locomotive requirements, running rooms, offices, furniture, fittings and other necessaries required by the East Indian and the Eastern Bengal State Railways.

(2) The supply of shunting power, staff (including labour), stores, stationery, printed forms for receiving, unloading and delivering to consignees inward merchandise from the East Indian Railway and connected lines, and receiving from consignees, loading and forwarding outward goods for the East Indian Railway and connected lines.

No. 16.



For all these and various other incidental services, the Commissioners were to be paid on all merchandise traffic received at and forwarded from the Docks, at the rate of one pie per maund, except on coal and other mineral traffic.

The railways competing for the Delhi-Amballa-Kalka Railway traffic, between Delhi and Bombay, came to an agreement under which the

rates were to be equal for traffic between Amballa and *viâ* and Bombay, by the following routes :—

(*a*) *Viâ* Sabarmati by the Bombay, Baroda and Central India and Rajputana-Malwa Railways.

(*b*) *Viâ* Agra and Itarsi by the East Indian, the Indian Midland, and the Great Indian Peninsula Railways.

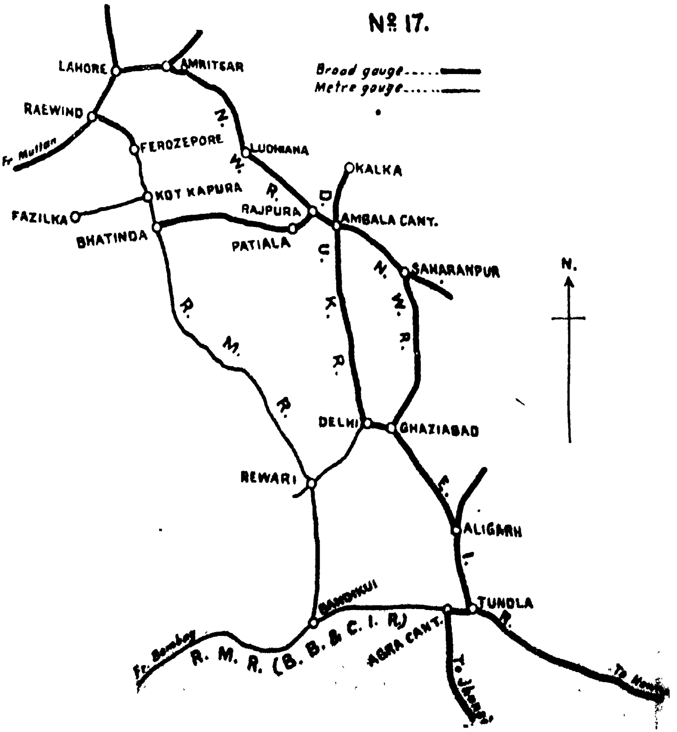
189.. G. I. P. Ry. reductions in rates to Bombay from Nagpur and viâ.

The reductions in rates made by the East Indian Railway and the Bengal Nagpur Railway, on grain, for traffic from the Central Provinces to Calcutta *viâ* Asansol, were followed by reductions in rates by the Great Indian Peninsula Railway from Nagpur to Bombay, for traffic from the Bengal Nagpur Railway to Bombay. The Great Indian Peninsula Railway rates were reduced as follows :—

From Nagpur to Bombay . . .	per ton per mile—4·73 pies.
From *viâ* Nagpur to Bombay . . .	rates varying from 4·36 to 3·375 pies per ton mile.

The rates formerly in force from Nagpur to Bombay were 5·92 pies, or say, about 6 pies per ton per mile; but it is to be remembered that before the opening of the Bengal Nagpur Railway, the traffic which the Great Indian Peninsula Railway carried from Nagpur, was comparatively small. The opening up of a vast territory by the Bengal Nagpur Railway gave new traffic to the Great Indian Peninsula Railway.

Nº 17.



Terms of 1892 agreement between E. I. and N.-W. Rys. applied to Rajpura-Bhatinda line or traffic to Delhi and viâ.

The opening of the Rajpura-Bhatinda Railway, in the Patiala State, formed a direct chord route from Rajpura on the North Western Railway to Bhatinda on the Rajputana-Malwa Railway (or rather the Rewari-Ferozepore Railway). The Rajpura-Bhatinda Railway is worked by the North Western Railway on behalf of the Patiala Durbar. The terms of the traffic agreement settled between the East Indian and North Western Railways, in May 1892, were extended to this newly opened section, and it was agreed that the traffic to and from stations between Rajpura and Alal for Delhi and for *viâ* Delhi (for the Bombay, Baroda and Central India Railway) should be routed over the Delhi-Umballa-Kalka Railway; and the traffic to and from stations between Alal and Bhatinda should be carried over the North Western Railway route *viâ* Rajpura and Ghaziabad.

1893-94 Transfer of the point of interchange between E. I. and the B. and N.-W. Rys. from Dighaghat to Mokameh-ghat.

In 1893-94, one of the important events was that the junction for interchange of traffic between all stations on the Bengal and North-Western Railway and stations on the East Indian Railway east of Mokameh, was transferred from Dighaghat to Mokamehghat, and the Bengal and North-Western Railway wagon ferry, which was hitherto plying between Digha and Paleza was transferred to Mokamehghat, which was already the junction for interchange of traffic between the East Indian and the Tirhoot State Railways. This meant a loss of 60 miles in lead to the East Indian Railway, but the interests of the public were considered paramount, and as the Bengal and North-Western Railway provided the ferry at Mokamehghat, it was proposed to take advantage of it. The East Indian Railway also gave the Bengal and North-Western Railway the concession of a higher mileage rate in the apportionment of through rates; while the East Indian Railway distance was constant (*viz.*, 284 miles) from Mokamehghat to Howrah and the East Indian Railway got the traffic in train loads, the Bengal and North-Western Railway had to collect the traffic, and for a portion of the traffic, their lead was comparatively short. The method of division agreed to was as follows :—

Method of division of through rates between the E. I. and the B. and N.-W. Rys.

"(*a*) Where the Bengal and North-Western Railway lead calculated *viâ* Dighaghat, was 100 miles or less, 50 per cent. was to be added to the Bengal and North-Western Railway mileage before division.

"(*b*) Where the Bengal and North-Western Railway lead was over 100 miles, but less than 150 miles, 25 per cent. was to be added to the distance of the Bengal and North-Western Railway before division.

"(*c*) Where the Bengal and North-Western Railway lead was 150 miles or more, 10 per cent. was to be added to the mileage of the Bengal and North-Western Railway before division of the through rates."

It may be useful to give a concrete example showing the method of division.

For instance, if a through rate of Re. 0-6-6 was granted for grain from Chowkaghat to Howrah, the division and apportionment would be as follows :—

	Actual distances (*viâ* Dighaghat).
	Miles.
Bengal and North-Western Railway	274
East Indian Railway	344
	618

As the distance over the Bengal and North-Western Railway was more than 150 miles, 10 per cent. of 274 miles (*viz.*, 27 miles) was to be added to the actual distance of 274 miles. Therefore the augmented distance over the Bengal and North-Western Railway would be (274+27) 301 miles, and the total through distance 645 miles (Bengal and North-Western 301+ East Indian 344). Out of the through rate of Re 0-6-6, a deduction of 6 pies was made for the ferry charge and the balance of Re. 0-6-0 was divided on mileage.

$$645 : 301 : : 6 \text{ annas} : X$$

$$\therefore X = \frac{301 \times 6}{645} = \text{Re. } 0\text{-}2\text{-}10$$

This left a balance of Re. 0-3-2 for the East Indian Railway for the distance Dighaghat to Howrah, and this rate for 344 miles worked out to ·11 pie per maund per mile.

But as the traffic was carried *viâ* Mokamehghat (not Dighaghat) this mileage rate of ·11 pie was worked out for 284 miles from Mokamehghat to Howrah, and the East Indian Railway proportion thus came to Re. 0-2-7 (284 miles × ·11 pie per maund per mile=31·24 pies). Therefore the division of the through rate of Re. 0-6-6 from Chowkaghat to Howrah (*viâ* Mokamehghat) would be—

	Rs.	A.	P.
Bengal and North-Western Railway portion of the journey	0	3	5
Bengal and North-Western Railway (for the ferry) .	0	0	6
East Indian Railway	0	2	7
	0	6	6

If the rate were divided on actual mileage of the two railways *viâ* Mokamehghat (after deduction of 6 pies on account of the ferry charge of the Bengal and North-Western Railway) the shares of the two lines would have been as follows :—

	Rs.	A.	P.	
East Indian Railway—284 miles	0	2	0	
Bengal and North Western Railway—333 miles .	0 0	3 0	3 0	Railway rate and Ferry charge.
	0	6	6	

Or in other words, the East Indian Railway would have got 2 pies more and the Bengal and North-Western Railway 2 pies less.

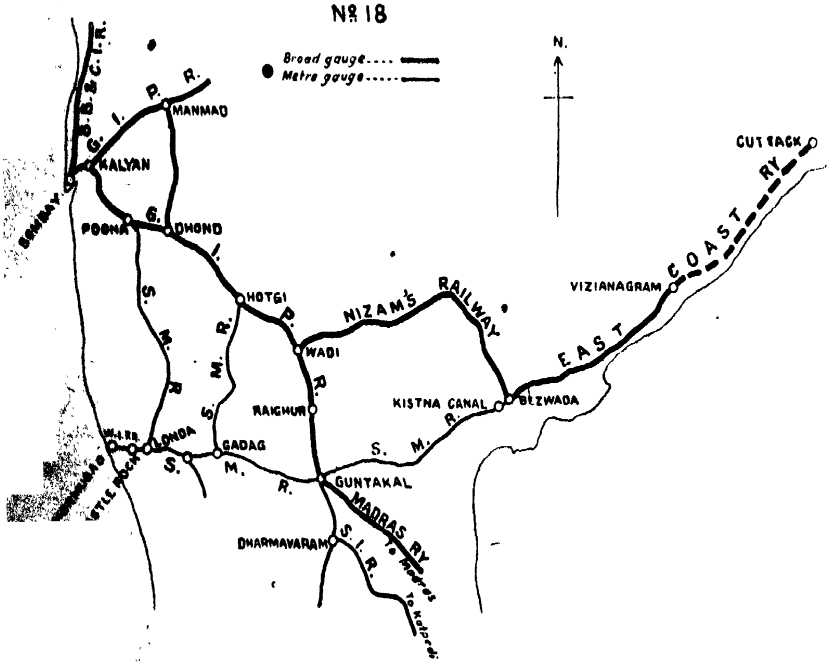
1893-94. Competition between I. M. and E. I. Rys. for traffic between Naini and east thereof and Agra.

The Indian Midland Railway branch Jhansi to Manikpur afforded an alternative route between the East Indian Railway Main Line stations east of Naini (including stations Naini to Manikpur on the East Indian Railway Jubbulpur Line) and Agra, as the following comparison of distances will show :—

	Miles.
Naini to Agra (by the East Indian Railway direct)	281
Naini to Manikpur, East Indian Railway	58
Manikpur to Agra, Indian Midland Railway	318
	376

The Indian Midland Railway in November 1893, started competing for traffic from the East Indian Railway east of Naini to Agra in order to obtain a share of it, on the ground that they gave the East Indian Railway, a share of Cawnpore-Bombay traffic, *viâ* Jubbulpur.

Nº 18



Junction between the East Coast, S. M. and N. G. S. Rys. at Bezwada.

In January 1893, the Guntakul-Dharmavaram section was transferred from the South Indian to the Southern Mahratta Railway, and in January 1894 a connection was established between the East Coast and the Southern Mahratta Railways at Bezwada by means of the metre gauge track being carried over the Krishna Bridge, and thus Bezwada became the junction between the East Coast Railway (5′ 6″ gauge), the Nizam's line (5′ 6″ gauge) and the Southern Mahratta Railway (3′ 3⅜″ gauge).

The distances from Bezwada to Poona and Hotgi compare as follows :—

	Viâ Wadi.	*Viâ* Southern Mahratta Railway
	Miles.	Miles.
Bezwada to Poona	595	772
Bezwada to Hotgi	422	576

Rice is grown in the country around Bezwada on the East Coast, and there is traffic in rice on both the Nizam's Guaranteed State and the Southern Mahratta Railways at this end of their lines, and the rates of stations on one line were adjusted, having regard to the rates of the corresponding stations of the other line.

The East Coast line, as far as it was opened, had to face both water and road competition of a formidable nature, so that it was thought expedient to reduce the rates, in the first instance, to the minimum of ⅛th pie for class goods and to 1/10th pie for special class goods in all cases.

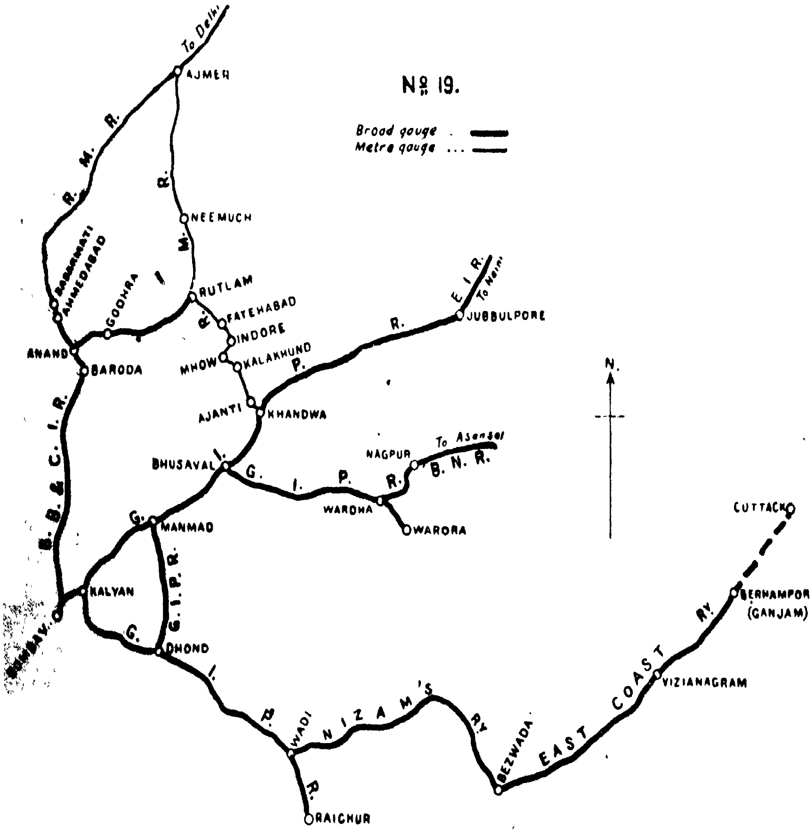
1894.
Proposal for an export Coal Depôt at Howrah (Sibpur).

In May 1894, a portion of the Barakar-Jheria Branch of the East Indian Railway, to serve the Jheria Coalfields, was opened for traffic, and there was a proposal from the East Indian Railway to establish a Coal Export Depôt of their own, on the right bank of the Hughli just below the Botanical gardens in Howrah (Sibpur), and to build a branch line from Bally to this depôt. The matter, however, did not proceed further as it was thought that the Docks at Kidderpore had recently been built and opened for traffic, and that before starting another depôt, it was necessary to gain further experience about the Kidderpore Docks as to (1) its capability of dealing with the export coal traffic and (2) whether the trade required additional accommodation, which could not be given at the Docks. Since then, the matter has come up for consideration of the railways and of the public from time to time ; and in 1903, the whole subject, from the point of view as to whether any accommodation in addition to that at the Kidderpore Docks was required or not, formed the subject of an enquiry by a public commission, known as the Luff Point Commission, to consider the proposal to build Docks for Coal traffic at Luff Point. This will be referred to later on.

Reduction of rates in Cotton from the Central Provinces to Calcutta.

The Bengal Nagpur Railway, in order to encourage the introduction of Berar and Central Provinces Cotton into Bengal, made a heavy reduction in the rate for cotton, from *viâ* Nagpur to *viâ* Asansol, and the classification of cotton, which was 2nd class, was reduced over the Bengal Nagpur Railway, to special class, for leads of 600 miles and more, so as to allow of a lower rate than ⅛th pie per maund per mile.

which was and is yet the minimum authorised by the Government for 2nd class. This transfer of classification enabled the Bengal Nagpur Railway to quote a rate of nearly $\frac{1}{7}$th pie per maund per mile. The Great Indian Peninsula Railway, on the other hand, fearing diversion of the export cotton traffic to the Calcutta Port, also, reduced the rates to Bombay from Nagpur and stations west of Nagpur in the Central Provinces and the Berars on their Nagpur branch. The extent of the influence of this reduced rate on the Bengal Nagpur Railway on the rates to Bombay from the important cotton despatching stations of the Great Indian Peninsula Railway, between Nagpur and Badnera, to Bombay can be well imagined from the comparisons given in the chapter on "Undue Preference, *vide* page 215."



In October 1894, the Bombay, Baroda and Central India Railway broad gauge connection between Godhra and Rutlam, in order to afford relief to the metre gauge route between Ajmer and Ahmedabad, was opened for traffic, and the distances between Bombay and the following stations by the 2 routes (*viz.*, (1) by the Bombay, Baroda and Central India Railway *viâ* Godhra and Anand and (2) by the Great Indian Peninsula Railway *viâ* Khandwa compare as follows:—

Competition between G. I. P. and the B. B. and C. I. Rys. for Malwa traffic on the opening of the Godhra-Rutlam line.

	Route (1).	Route (2).
	Miles.	Miles.
Rutlam	433	514
Indore	507	440
Mhow	520	427
Kalakhund	529	418
Ajanti	586	363

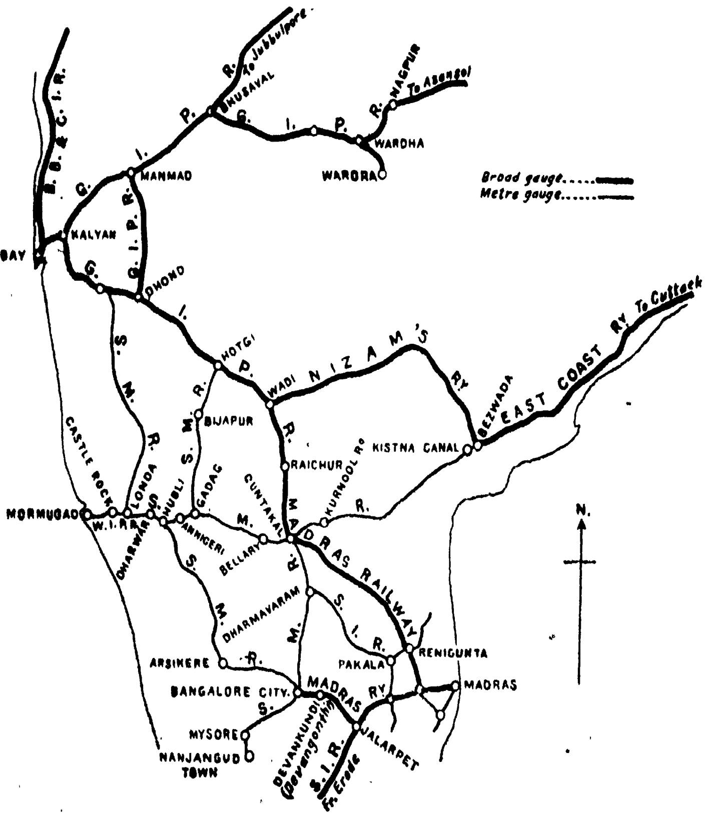
The Bombay, Baroda and Central India Railway so adjusted their rates that the Rutlam route retained the traffic between Bombay and stations north of the Holkar ghats, and the Great Indian Peninsula Railway were given the traffic of all stations on the ghauts and below the ghauts to the Khandwa route (*viz.*, from stations Kalakhund to Ajanti), but the Great Indian Peninsula Railway did not accept this position and competition followed.

1895-96. Cancellation of the 1889 agreement between the G. I. P. and S. M. Rys, and competition resulting in a fresh agreement.

In 1895, the Southern Mahratta Railway gave six months' notice of the cancellation of the agreement made between the Great Indian Peninsula and the Southern Mahratta Railways in August 1889, previously referred to, and then came a period of war of rates; the object of the Southern Mahratta Railway was apparently to get a better lead by a revised routing of traffic. The 1889 agreement was practically based on the shortest distance between the Hotgi and the Poona routes, but this had the effect of reducing the lead of the Southern Mahratta Railway on the great bulk of the traffic originating on their line, and on which they would generally get a better lead *viâ* Poona than *viâ* Hotgi.

The matter was under discussion between the two railways for a long time, and the West of India Portuguese Railway's interests were also concerned. The West of India Portuguese Railway was built out of British capital on the guarantee of the Portuguese Government, the understanding being that the West of India Portuguese Railway would get the same treatment as a railway in the British territory would. It would appear that for some time it was held that it would be quite sufficient if a sliding scale of rates were applied *viâ* all junctions by the Southern Mahratta Railway, but this did not suit the West of India Portuguese Railway, as the distances to Poona from many stations being longer, this route had the advantage of a lower mileage rate under such a scale. However, by adjustments of rates over their own line and in the steamer freight, they were able, in some cases, to maintain a difference in favour of the combined rail and sea route, *viâ* the West of India Portuguese Railway and the Murmagao Harbour for traffic to Bombay, as compared with the all rail routes *viâ* Poona and *viâ* Hotgi. Murmagao did not export direct to any other than Indian ports, and although it dealt with traffic to and from the Southern Mahratta Railway, the immediate destination of such traffic was Bombay, and shipment to European ports was made after the traffic had been received in Bombay; or in other words, the West of India Portuguese Railway in combination with a Steamer Company, offered an alternative route for traffic between Bombay and the Southern Mahratta Railway, for which there were in existence the all rail routes.

No. 20.



An agreement was however concluded between the Agents of the Great Indian Peninsula and the Southern Mahratta Railways in 1895, but carried into effect in 1896, under which the routing of the traffic was mainly *viâ* the Poona route, except that the *viâ* Hotgi route retained certain stations on the Bijapur branch, from Hotgi to Gadag, and a few other stations. The effect of this agreement was that the difference in rates in favour of the Murmagao route, as compared with the rates by the all rail routes, was reduced and in some cases the rates, which were hitherto cheaper *viâ* Murmagao, became higher than those by the Poona and Hotgi routes as illustrated below.

Prior to March 1896, the rates from the following stations to Bombay by the all rail and the combined rail and sea routes were as under :—

Stations.	Rates *viâ* Mormugao.			Rates *viâ* Poona or *viâ* Hotgi.			Difference in favour of Mormugao.		
	Rs.	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*
Dharwar	0	6	4	0	8	9	0	2	5
Hubli	0	6	8	0	8	11	0	2	3
Annigeri	0	7	3	0	9	3	0	2	0
Gadag	0	7	8	0	9	1	0	1	5
Hospet	0	8	9	0	9	11	0	1	2
Devangiri	0	8	9	0	10	3	0	1	6
Bellary	0	8	9	0	10	6	0	1	9
Arsekeri	0	9	0	0	11	8	0	2	8
Kurnool Road	0	9	0	0	11	6	0	2	6

But on and from 1st March 1896, that is after the rates had been adjusted in terms of the new agreement, the position was reversed, so that in many cases the rates *viâ* Murmagao became higher, as follows :—

Stations.	*Viâ* Mormugao.			*Viâ* Poona or *viâ* Hotgi.			Difference in favour of (—) or against (+) Mormugao.		
	Rs.	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*
Dharwar	0	6	4	0	5	8	+0	0	8
Hubli	0	6	8	0	6	0	+0	0	8
Annigeri	0	7	3	0	6	7	+0	0	8
Gadag	0	7	8	0	7	0	+0	0	8
Hospet	0	8	9	0	8	6	+0	0	3
Devangiri	0	8	9	0	8	6	+0	0	3
Bellary	0	8	9	0	8	10	—0	0	1
Arsekeri	0	9	0	0	9	5	—0	0	5
Kurnool Road	0	9	0	0	9	3	—0	0	3

It would appear that the Southern Mahratta and the Great Indian Peninsula Railways were inclined to agree to equalisation, because the basis of their arrangement was that the through rates should not be fixed between Southern Mahratta Railway and Bombay, at less than the through rate to Bombay *viâ* Murmagao Harbour, with Port Trust dues added. The Traffic Managers of the two lines held meetings, as the result of which, the following scale with certain adjustments for Bombay traffic *viâ* Poona was fixed.

When carried over the Southern Mahratta Railway for distances of—

	Per maund per mile.
	Pies.
175 miles or less	⅓rd
176 to 275 miles	¼th
276 to 500 „	⅕th
501 to 925 „	⅙th
926 miles and over	⅐th

Equalisation was not what was required by the West of India Portuguese Railway and the Bombay Steam Navigation Company, who telegraphed on 23rd February, that from 15th March 1896 the rate from Portuguese Frontier to Bombay would be reduced by one anna a maund (Rs. 1-11-0 per ton).

The Bombay Steam Navigation Company took the course of issuing the following notice to grain merchants and their agents :—

"The Bombay Steam Navigation Company give notice that rates on Grain and Seeds have been reduced one anna per maund from 1st March 1896. Refunds will be made on such goods from and after the 1st March."

The effect of the notice thus issued was to upset all ideas of equalisation by the two routes, and traffic instead of going *viâ* Poona, went *viâ* Murmagao. This was taken up by the Great Indian Peninsula, and the result was that the rates *viâ* Poona were again altered, while on the other hand the rates for grain *viâ* Murmagao were raised to the maximum of ⅓rd pie per maund per mile (9 pies per ton per mile). The result of this was, of course, to stop any further reductions on the part of the West of India Portuguese Railway and the Bombay Steam Navigation Company and the rates became equal or cheaper by the all rail routes and the traffic went *viâ* Poona or *viâ* Hotgi.

Another agreement was come to between the Great Indian Peninsula and Southern Mahratta Railways in 1896 in respect of traffic interchanged between the two lines other than Bombay and it was accepted that the shortest route should have the cheapest rates and carry the traffic. It was also subsequently agreed between the Madras, the Great Indian Peninsula and the South Indian Railways that the goods booked between these 3 railways were to be carried at the rates in force, by the cheapest route, although the traffic might be routed by a longer route to give the Railway on which it originated, a longer lead ; of course it was understood that the application of the shortest route rate by the longer did not involve infringement of the minimum.

Agreement for division of sugar and jagree traffic from the O. and R., R. and K. and the B. and N.-W Rys. to C. P., C. I. and Rajputana.

The rates for sugar and jagree had been considerably lowered from Cawnpore to stations on the Great Indian Peninsula Railway in Khandesh and to Bombay, Baroda and Central India Railway stations on their Neemuch branch. The railways came to an arrangement in 1895 to divide the traffic between the Great Indian Peninsula and the Indian Midland Railways on the one side and the Bombay, Baroda and Central India Railway on the other. The Oudh and Rohilkhand and East Indian Railways were also parties to this agreement. The settlement come to was as follows :—

(*a*) The total traffic in sugar and jagree from stations on the Oudh and Rohilkhand, Rohilkund and Kumaon and Bengal and North-Western Railways to stations on the Malwa section of the Bombay, Baroda and Central India Railway between Ajanti and Khandesh (excluding Khandesh) was divided between the Indian Midland Railway and Great Indian Peninsula Railway route *viâ* Cawnpore-Itarsi and Khandwa and the Bombay, Baroda and Central India Railway, *viâ* Cawnpore in equal proportions.

(*b*) Traffic from the Oudh and Rohilkhand and the Rohilkund and Kumaon Railway stations to Great Indian Peninsula Railway stations, Jubbulpur to Gadarvada, was allotted to the East Indian Railway, route *viâ* Jubbulpur.

(*c*) Traffic from Oudh and Rohilkhand Railway stations, Malipur to Moghalsarai on the Oudh and Rohilkhand Railway to stations on the Great Indian Peninsula Railway (excepting Gadarvada to Jubbulpur) was divided between the Moghalsarai-Jubbulpur and Cawnpore-Jubbulpur routes in equal shares. In order to obtain this division, the rates for traffic from Oudh and Rohilkhand Railway stations Kashi to Zaffrabad, were adjusted in favour of the Moghalsarai route and those from stations Jaunpur to Malipur were made the cheapest by the Cawnpore-Jubbulpur route.

Extensions sanctioned in 1895-96

In 1895-96 sanctions were given for important extensions to Indian Railways, *viz.* :—

(1) For the construction, by the Bengal Nagpur Railway, of a line from Chakardharpur (Sini) to Calcutta, with a branch from Kharagpur (Midnapur) to Cuttack.

(2) For the construction of the Southern Punjab Railway from Delhi to Samasata.

(3) *For the construction of the Bezwada Madras Railway, including the conversion of 25 miles of metre gauge (from Nellore to Gudur) into broad gauge.* The latter formed part of the South Indian Railway, but as it fell within the alignment of the Bezwada Madras broad gauge line, it was absorbed into this line.

(4) For the construction of a Railway from Moghalserai to Gya.

Opening of Assam Bengal Ry. and competition with the I. G. S. N. Co.

The construction of the Assam Bengal Railway was also in progress and sections Chittagong to Laksham and Laksham to Comilla, including the Laksham-Chandpur branch, were opened for traffic. This opened up competition between the India General Steam Navigation Company and the Assam Bengal Railway for traffic to Chittagong port and places served by that port. The Assam Bengal Railway was interested in the traffic from Calcutta and the East Bengal being carried from Chandpur to Chittagong by the Assam Bengal Railway, but the India General Steam Navigation Company, which had hitherto carried this traffic by steamers to Chittagong direct, did not want to give up this traffic at Chandpur and hence competition followed.

Through booking was established between stations on the Assam Bengal Railway *viâ* Chandpur and the Eastern Bengal State Railway and all stations on Indian Railways. The Assam Bengal Railway had to quote low rates from the very start for traffic between Chandpur and *viâ* and Chittagong. Apart from this a rate of $\frac{1}{8}$th pie per maund per mile was quoted on the Assam Bengal Railway for special class goods; in some cases, even in 1895, *e.g.*, the rates for coal, were at the minimum of $\frac{1}{10}$th pie per maund per mile.

E. I. Ry. accepting $\frac{1}{10}$th pie on grain on a lead of 132 miles.

It may be interesting to note here that the East Indian Railway at one time (1895) accepted a rate of $\frac{1}{10}$th pie per maund per mile on grain and seeds traffic, from the Bengal Nagpur Railway to Calcutta for a distance of 132 miles, from Asansol to Calcutta, in conjunction with the Bengal Nagpur Railway, in order to compete with the Great Indian Peninsula Railway, which had reduced rates with a view to attract this traffic to Bombay. This instance is mentioned here to demonstrate that railways have, in the past, accepted a rate of $\frac{1}{10}$th pie on grain for a lead of 132 miles, although it involved hauling of Bengal Nagpur Railway wagons empty from Calcutta to Asansol. But it is also to be pointed out that the East Indian Railway had not had to use their wagons to carry this traffic, which they practically got in train loads from the Bengal Nagpur Railway. The East Indian Railway knew at the time that the traffic was only temporary, and would be lost to them as soon as the Bengal Nagpur Railway got direct entrance into Calcutta.

Agreement [illegible] S. P. Ry. and the

In the Indenture made in August 1895, between the Secretary of State for India in Council and the Southern Punjab Railway Company, the

Sec. of State regarding rates on traffic interchanged between the S. P. B. and the N. W. Rys.

following was provided in the matter of railway rates over this line and between the North Western Railway (which works the line) and the Southern Punjab Railway :—

"(1) That the maximum rates and fares and classification of goods and passenger should be the same on the Southern Punjab Railway as on the North Western Railway.

(2) That the rates and fares for the carriage of goods and passengers will be on the mileage of the shortest route, and will be proportionately shared on the respective mileages making up the mileage of the shortest route.

(3) That the Patiala State Railway will be deemed a part of the North Western Railway in determining the shortest route, and that all traffic originating and terminating on the Patiala State Railway and passing to and from that line, will be booked by the shortest route.

(4) That the North Western Railway may work all goods traffic by any route at their discretion, but this shall not affect the distribution of earnings between the North Western Railway and the Southern Punjab Railway."

Later on, there was dispute as to the distribution of earnings between the Southern Punjab and the North Western Railways under condition (4), and the matter was settled by arbitration in 1901.

The Bengal Nagpur Railway had been for some time claiming a share of the traffic from Katni to Asansol and to stations Asansol to Calcutta by their route.

The distances between Katni and Asansol by the two routes compared as under :—

	Miles.
Katni to Asansol by the East Indian Railway	544
Katni to Asansol by the Bengal Nagpur Railway	573

Division of traffic from Katni to stations on the length Calcutta to Asansol on the E. I. Ry. between the B. N. and the E. I. Rys.

The East Indian Railway urged that so far as up traffic from their stations (Calcutta to Asansol) to Katni was concerned, they were not prepared to consider the claim of the Bengal Nagpur Railway to this traffic, because of the fact that the Bengal Nagpur Railway had no control over this traffic, both the forwarding and receiving stations being on the East Indian Railway, but in regard to traffic from Katni to these stations, the following arrangement was made on 1st November 1896 :—

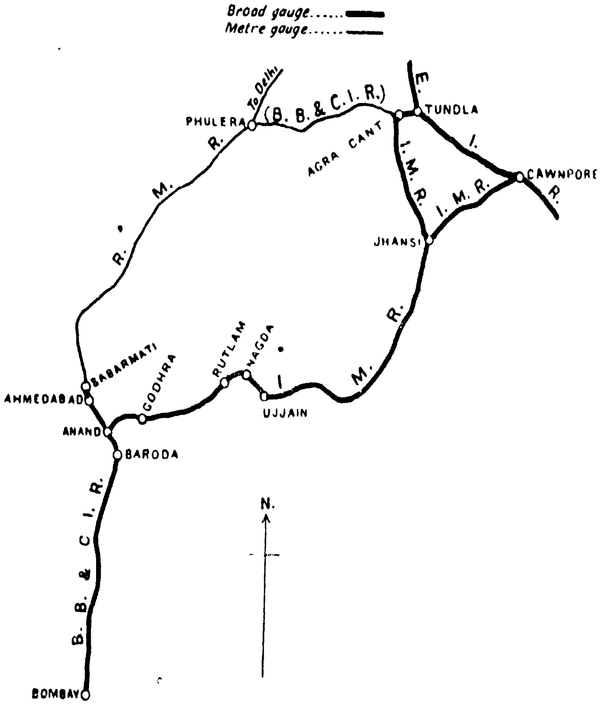
" All downward local goods traffic of every description from Katni to stations (Asansol to Howrah inclusive) on the East Indian Railway, shall be divided equally between *viâ* East Indian Railway, and the Bengal Nagpur Railway.

" To carry out this arrangement the Station Master, Katni, shall despatch one-half of the total weight of goods traffic by the East Indian Railway in East Indian Railway wagons, and the other half of the total weight by the Bengal Nagpur Railway route in wagons belonging to that line, complete consignments being kept together and forwarded by one of the two routes, the sender's request as to routing being carried out when expressly stated on the forwarding note.

"The railway that has forwarded an excess quantity during one week over and above the proportion of one-half of the total as agreed upon, must consign by the other route, during the following week in order to make up the difference necessary to adjust the balance due to the other week."

The Bina-Goona and the Bhopal-Ujjain (Native State Railways) were taken over for working by the Indian Midland Railway. The former was opened in 1895 and the latter in 1896.

Nº 21.



Opening of the Bhopal-Ujjain Ry. and competition between the I. M. and the B., B. and C. I. Ry., and

The opening of the Bhopal-Ujjain line formed a junction between the Indian Midland and Bombay, Baroda and Central India Railways at Ujjain. The broad gauge connection had not then been formed between Rutlam and Ujjain, and, therefore, for traffic from the Indian Midland Railway to Bombay, Baroda and Central India Railway (*e.g.*, from Jhansi to Ahmedabad) there were two transhipments (*viz.*, one at Ujjain and the other at Rutlam). But nevertheless, this opened an alternative route *subsequent settlements.*

from the Northern India, say Agra, Cawnpore and Delhi, to Bombay, Baroda and Central India Railway stations on the length Rutlam to Godhra and Godhra to Bombay, by the way of the Indian Midland Railway, and also for stations on the metre gauge north and south of Rutlam. The following comparison of distances will show that the newly opened route had some influence on the traffic between the points referred to :—

	Viâ Indian Midland Railway and Ujjain.	By Bombay, Baroda and Central India Railway.
	Miles.	Miles.
Agra to Ujjain	429	531
Cawnpore to Ujjain	433	754
Rutlam to Cawnpore	493	690
Rutlam to Agra	489	381
Ahmedabad to Agra	694	537
Ahmedabad to Cawnpore	698	762

The Bhopal-Ujjain Railway opened the door for Kharagoda Salt for stations on the Indian Midland Railway *viâ* Ujjain.

The Indian Midland Railway entered into competition for traffic between Northern India and the Bombay, Baroda and Central India Railway *viâ* Ujjain and although the former could not retain the traffic, it could pull down the rates. The two railways settled their disputes by an agreement in 1896, in which the following division of traffic was agreed to :—

(I) Traffic from Agra, Cawnpore, *viâ* Agra, from Aligarh, Ghaziabad, *viâ* Delhi (but not Delhi itself) up to Amritsar, *viâ* Cawnpore (from E I and Oudh and Rohilkhand Railways but not Cawnpore-Achnera).	To Ujjain and *vice versâ* . .	Allotted to the Indian Midland Railway route *viâ* Jhansi and Bhopal
(II) Traffic from Rutlam and metre gauge stations south thereof and broad gauge stations north of Saphala up to Ahmedabad and *vice versâ*	To D U K Railway, Cawnpore and *viâ* (except or Cawnpore Achnera Railway) and for Oudh and Rohilkhand Railway stations north of Tillor and Shahgarh.	Allotted to the Indian Midland Railway route *viâ* Bhopal and Ujjain

1896-97.
Calcutta-Bombay rivalry in the matter of rates from the Northern India.

Competitive railway rates to Calcutta and Bombay for wheat and oil seeds from the North-West Provinces and the Punjab attracted a great deal of attention on the part of both the Calcutta and the Bombay Chambers of Commerce. The latter also apprehended competition from the Karachi Port on the opening of the Southern Punjab Railway which was nearing completion.

Each Chamber and railway serving it were anxious to shorten the distance from their port to the producing centres of

Northern India. The Bombay, Baroda and Central India were looking forward to the sanction for a 5′-6″ line from Aligarh to Nagda, *viâ* Muttra, and for a metre gauge chord, from Rewari to Phulera, while the East Indian Railway were equally anxious for the construction of the Grand Chord Line from Sitarampur to Moghalsarai *viâ* Gya.

The Bombay Chamber took the initiative in the matter of railway rates and urged for the appointment of a Railway Commission to investigate the whole case from the point of view as to whether or not the East Indian Railway high mileage rates from its stations, adjacent to junctions with the Bombay lines, as well as on the lengths Aligarh to Hathras, Aligarh to Agra, Delhi to Aligarh, for Bombay traffic, as compared with the rates for charge on traffic to Calcutta, constituted undue preference in preventing traffic for Europe taking its natural route *viâ* Bombay. On the other hand, the Calcutta Chamber and the Calcutta Port Commissioners agitated for reductions in rates towards the Calcutta port, principally for export traffic, on the ground that the Calcutta port was not getting the advantage of its cheap railway working and that it was not fair to have same mileage rates for Calcutta as for Bombay, because the railways leading to the Bombay port were more costly to work, on account of high gradients and the absence of heavy local traffic, whereas the cheap cost of coal and other natural conditions on the East Indian Railway and its feeders, gave these lines special advantages in the matter of their ability to grant cheaper rates than the Bombay railways.

The difference in the sea freights to Liverpool between Calcutta and Bombay was 5*s*. per ton in the case of wheat and 8*s*. per ton for oil seeds in favour of Bombay at the time.

The Bombay Chamber while admitting the advantages of the Calcutta Port in the matter of low cost of operation on the East Indian Railway drew attention to the fact that the bulk of the traffic from the Northern India and the Punjab to Bombay was carried by the Bombay, Baroda and Central India Railway (including Rajputana-Malwa Railway) route which was shorter than that of the Great Indian Peninsula, and that, therefore, the argument of the Calcutta Chamber about the cost of operation on the Bombay lines being high on account of steep gradients and that the Great Indian Peninsula railway was being worked at a loss to Government to the extent of over Rs. 40 lakhs a year, owing to its inability to earn the guaranteed interest of 5 per cent., did not apply in the case of the traffic in question, for which the shortest route was *viâ* the Bombay, Baroda and Central India Railway and which railway was not handicapped by such conditions as tended to increase the expenditure on the Great Indian Peninsula Railway.

To bring out clearly the position in the matter of advantages and disadvantages of the two ports in connection with the power of the railways to quote low rates at the time it may be useful to give percentages of net earnings on capital outlay, as well as the percentage of working expenses to gross earnings on the East Indian, Rajputana-Malwa, and Bombay, Baroda and Central India Railways. They were as follows during 1892-97 :—

	Percentage of net earnings to capital outlay.			Percentage of working expenses to gross earnings.		
—	East Indian Railway	Raj-putana-Malwa Railway.	Bombay, Baroda and Central India Railway.	East Indian Railway.	Raj-putana-Malwa Railway.	Bombay, Baroda and Central India Railway
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1892 . .	9·51	10·47	8·67	29·34	41·12	42·92
1893 . .	9·40	10·50	10·12	30·15	43·20	36·55
1894 . .	9·70	12·06	10·50	31·39	41·79	36·85
1895 . .	9·82	10·96	11·17	31·61	42·45	37·69
1896 . .	9·60	8·55	8·84	32·46	43·97	45·07
1897 . .	9·56	8·26	8·63	29·47	96·60	54·63

Further, the week mile earnings of the railways during 1897 were ;—

	Per week per mile.
	Rs.
East Indian Railway	649·19
Rajputana-Malwa Railway	212·24
Bombay, Baroda and Central India Railway . .	595·04

and the average sum received for carrying one ton one mile and the average cost of hauling and the profit per ton mile were as given below :—

	Earning. Pies per ton mile.	Cost in pies per ton mile.	Profit per ton mile in pies.
East Indian Railway . . .	4·87	1·48	3·39
Bombay, Baroda and Central India Railway	8·18	4·26	3·92
Rajputana-Malwa Railway . .	7·47	3·57	3·90

The capital cost per mile on the East Indian Railway in 1897 was Rs. 2,19,819 against Rs. 76,736 and Rs. 2,18,404, the capital costs per mile of the Rajputana-Malwa and Bombay, Baroda and Central India Railways respectively. It is true that the Bombay, Baroda and Central India and Rajputana-Malwa Railways paid a return on their respective capital as good as the East Indian Railway, but this was mainly due to the high average rate charged by these lines. The Bombay, Baroda and Central India Railway got a rate of more than 8 pies per ton mile and the Rajputana-Malwa Railway nearly 7½ pies per ton mile, while the East Indian Railway rate was 4·87 pies, but in spite of this low average rate of the East Indian Railway, it is seen that the East Indian Railway, owing to its exceptional low cost of operation, earned 3·39 pies per ton mile against 3·90 pies of the Bombay, Baroda and Central India and Rajputana-Malwa Railways.

Again, the volume of traffic being much greater on the East Indian Railway their aggregate revenue, even at a low profit per unit, was larger. Therefore in spite of heavy capital cost and low earnings per unit, the East Indian Railway, owing to its cheaper cost of working and heavy traffic and better wagon loads, was in a position to offer cheaper rates per unit per mile at a good profit than either the Bombay, Baroda and Central India or Rajputana-Malwa Railways. If the Bombay, Baroda and Central India and the Rajputana-Malwa Railways had brought down their average rates to the level of those on the East Indian, their profits would have been very small; in the case of the Rajputana-Malwa Railway it would have come down from 3·90 to 1·30 pies per ton mile, but even this would not have secured them the traffic, for the East Indian Railway would have at once gone down further. *The result would have been that the traffic would have continued to take its former route but the Railways would have suffered heavily.* It was true that the proportion of wheat traffic from the United Provinces was larger to Calcutta than to Bombay, and so also was the traffic in rape and mustard seeds; but the great bulk of the traffic to Calcutta was for local consumption, for a large quantity of wheat was consumed throughout Bengal, especially in Calcutta, and within a range of 150 to 200 miles from Calcutta and mustard oil was extensively used in Bengal and East Bengal both for culinary purposes and for anointing the body before bath.

Competition between the G. I. P. and I. M. Rys. on the one side and the E. I. Ry. on the other.

Both the Calcutta and the Bombay Chambers of Commerce, however, went on agitating and towards the end of 1896, the Calcutta Chamber of Commerce asked for the minimum rate over the East Indian Railway to be reduced to about $\frac{1}{15}$th pie per maund per mile, but the East Indian Railway authorities were not at this stage prepared to fall in with the views of the Bengal Chamber about lowering the minimum, apparently on the ground that the time had not yet come for reduction in the minimum rate to a figure lower than $\frac{1}{10}$th pie per maund per mile. and the Bombay, Baroda and Central India and the Rajputana-Malwa Railways also told the Bombay Chamber of Commerce that they were not prepared to reduce their rates. The Great Indian Peninsula and Indian Midland Railways, however, decided in 1897 to take action to effect reductions in the rates from the East Indian Railway to Bombay, and the first action which they took was the cancellation of the agreement come to in 1892 between East Indian on the one side and the Great

Indian Peninsula and Indian Midland Railways on the other. The East Indian Railway were, under this agreement, allowed a lien, *viâ* Jubbulpur, on Cawnpore-Bombay traffic and also on traffic from stations on their length Khaga to Etawah and from the Oudh and Rohilkhand Railway to Great Indian Peninsula Railway stations west and south of Itarsi, for which the Indian Midland Railway *viâ* Cawnpore offered the shortest route.

The Indian Midland and the Great Indian Peninsula Railways were then separate undertakings and there was no serious talk yet about their amalgamation. At first sight, therefore, it will be difficult to understand why the Great Indian Peninsula gave notice to the cancellation of the 1892 agreement because their lead on traffic *viâ* Jubbulpur was 152 miles longer than *viâ* Itarsi, but the Great Indian Peninsula Railway had other objects in view. The cancellation of the agreement was followed by competition. The East Indian Railway, however, held that they were entitled to maintain equal rates *viâ* Jubbulpur and in spite of the Great Indian Peninsula Railway declining to accept their proportions of the through rates quoted *viâ* Jubbulpur by the East Indian Railway, in effecting equalisation by the Itarsi route, the East Indian Railway continued to book traffic at these rates resulting in over charges being realised by the Great Indian Peninsula Railway in Bombay, which the East Indian Railway promised to refund to the merchants. The position assumed by the East Indian Railway was held by the Bombay lines to be contrary to law as under section 42 (4) (*a*), (*b*), (*c*), (*d*) of the Indian Railways Act: if one railway objects to its share of the through rate apportioned by another line, the remedy lies in the case being referred to a Court of Railway Commissioners and that the through rates with such apportionments cannot come into force without the sanction of the Commissioners.

Settlement between the G. I. P., I. M. and E. I. Rys. in 1897.

Any how this position could not be maintained for any length of time and the parties concerned considered the advisability of settling their dispute amicably. The settlement come to was practically a renewal of the 1892 Agreement, with the difference that the East Indian Railway, in order to be able to retain the share of the traffic they hitherto got *viâ* Jubbulpur, agreed to the following further concessions to the Great Indian Peninsula and the Indian Midland Railways:—

(*a*) That the East Indian Railway were to recognise the right of the Great Indian Peninsula Railway to quote same mileage rates to Bombay from the East Indian Railway stations, as the East Indian Railway quoted for such stations to Howrah by effecting reduction in their own (Great Indian Peninsula) proportion. The East Indian Railway were not to reduce their rates to Howrah after the Great Indian Peninsula had once quoted same mileage rates to Bombay.

(*b*) The East Indian Railway were to recognise the right of the Indian Midland Railway to a share of the traffic from the

East Indian Railway stations between Allahabad and Howrah to Agra and *vice versâ viâ* the Manikpur route; this traffic was to be divided in shares of $\frac{7}{16}$ths to the *viâ* Manikpur route and $\frac{9}{16}$ths to the East Indian Railway local route. This included a share of the traffic in Bengal Coal to Agra and beyond Agra and also a portion of the traffic in grain, cotton, etc., from Agra to Howrah.

(*c*) Further, the East Indian Railway were to join the Great Indian Peninsula and Indian Midland Railways in maintaining equalisation of rates with those in force by the Bombay, Baroda and Central India and Rajputana-Malwa Railways route *viâ* Sabarmati in respect of traffic between Delhi and Bombay, Ghaziabad and Bombay, *viâ* Ghaziabad and Bombay and *viâ* Delhi and Bombay; the rates were to be divided on mileage between the three railways although the East Indian Railway leads were short.

(*d*) Similarly, in the case of traffic originating on the East Indian Railway stations on the length Agra to Delhi and also for the Oudh and Rohilkhand Railway traffic *viâ* Aligarh, the East Indian Railway were required to join the Indian Midland Railway and the Great Indian Peninsula Railway in maintaining equalisation of rates to Bombay with the Bombay, Baroda and Central India Railway *viâ* Hathras. The East Indian Railway were to accept mileage division of rates, subject to a minimum of Re. 0-1-0 per maund, which would give them on the distance say Khurja to Agra 89 miles, a mileage rate equivalent to ·26 pie per maund per mile.

This agreement was regarded by the Bombay Chamber of Commerce as a satisfactory one in the interests of their port.

Competition between the G. I. P., I. M. and E. I. Rys. on the one side and the R. M. Ry. and B., B and C. I. Ry. on the other for traffic between Bombay and Northern India.

Soon after the conclusion of this agreement, the Great Indian Peninsula, Indian Midland and East Indian Railways combined to get a larger share of the traffic from the United Provinces and the Punjab to Bombay and *vice versâ*. The competition lasted for about 3 or 4 months between these railways and the Bombay, Baroda and Central India Railway, and in view of the unnecessary loss of revenue, the Consulting Engineer for Railways in Bombay thought it fit to mediate between the competing lines and eventually a settlement was come to between the Great Indian Peninsula, the Indian Midland and the Bombay, Baroda and Central India Railways at a meeting, at which, besides the Agents and General Traffic Managers of the 3 lines, there were present the Consulting Engineer and the Government Examiner of Accounts:—

From 1st May 1898, a settlement was arrived at between the Great Indian Peninsula, Bombay, Baroda and Central India, and the Indian

Agreement between t Bombay li in 1898.

Midland Railways, under which it was agreed that the traffic should be pooled on the following basis :—

	To Bombay, Baroda and Central India Railway.	To Great Indian Peninsula, Indian Midland, and East Indian Railways' route.
Delhi	⅔	⅓
Viâ Delhi—		
Southern Punjab Railway	⅔	⅓
D.-U.-K. Railway	⅔	⅓
East Indian Railway	60 %	40 %
North-Western State Railway *viâ* Ghaziabad	60 %	40 %
East Indian Railway, and Oudh and Rohilkhand State Railway stations comprised in the territorial arrangement . . .	60 %	40 %
Hathras City	60 %	40 %

But equal rates were not maintained by the two routes. The actual allotment of stations, based on statistics of traffic of previous years, to attain the above division, were as under :—

To broad gauge route *viâ* Itarsi	To Bombay, Baroda and Central India Railway *viâ* Sabarmati.
(1) Stations on the North-Western Railway *viâ* Ghaziabad, including *viâ* Saharanpur.	(1) Delhi (Local).
(2) Stations comprised in territorial arrangement, *viz* stations Hathras to Khurja on the East Indian Railway, including *viâ* Alighar.	(2) Hathras City (Local).
(3) Stations on the D.-U.-K. Railway	(3) East Indian Railway stations from Chola (Bulandshahr) to Delhi-Shahdara.
	(4) Stations on the Southern Punjab Railway *via* Delhi.

Views of th Select Committees on Railwa in England on traffic agreements between railways to terminate competition

It will be seen that although alternative routes existed in respect of traffic between any two points, there was only one route open, so far as the public were concerned. The Select Committee of 1881 on Railways in England held the view that "the agreement so far as it neutralised the benefits of competition should be construed strictly," but it was held in the case of Hare *versus* London and North Western Railway Company "that there was no principle of public policy which rendered void the traffic agreements between two lines of railways for the purpose of avoiding competition and that the Court would not interfere with a traffic agreement between the lines of railways to divide the net earnings in certain proportions." But in this latter case it would appear, the intention was that equal rates would be maintained by the alternative routes and the earnings of all the routes would be divided in certain fixed proportions, or in other words, so far as the public were concerned. there would be equal rates by the alternative routes and all the routes would be open to them.

The Select Committee of 1853 pointed out that the tendency of the railway companies in England was to "union and extension and that competition usually ended in combination and amalgamation."

In the report of the Select Committee of 1883, the following paragraph appears :—

"There has on different occasions been effectual competition between railway companies and it is probable that the charges now made will bear the trace of that competition. But it may be taken as a general rule that there is now no active competition between different railways in the matter of rates and fares. Whenever different companies run between the same places, they arrange their prices. They not only do make the same rates but bind themselves by agreement not to make lower rates so that one cannot lower its rates without the consent of the other." The same report goes on further to say that "the simplest and least complicated form of combination is the agreement for equal rates " and " that competition must fail to do for railways that it does for trade." It is true that in the case of a great many agreements between Indian railways for division of traffic, equal rates are not maintained by the alternative routes, which appear to be contrary to the practice in England. As has been pointed out, the tendency of a traffic agreement in England is to arrange prices and to combine in order not to reduce rates without the consent of all the parties concerned. Therefore, it will be seen, that although equal rates by alternative routes are obtainable on English Railways, it is not possible for one route to quote lower rates unless the other routes agree, so that the public are not benefited so far as reductions in rates are concerned, by having more than one route open to them. In traffic agreements between Indian railways, when the pooling of traffic is carried out by allotments of certain traffic or certain stations to certain routes, the cheapest rate applies by the allotted route. When, however, there is congestion of traffic on one route, the excess is diverted to the other route and temporarily the rates of the allotted route are applied to the alternative route. If there be no division of traffic or pooling of earnings and the arrangement be only as to equal rates by all routes, it will be to the advantage of the traders and of the public to have all the routes open to them, for this will mean that although there might be no competition so far as railway rates are concerned, there will be competition in facilities.

S. M. Ry. and G. I. P. competition for traffic between Bombay and the Deccan.

In July 1898, the Southern Mahratta Railway Board in London gave notice to the Great Indian Peninsula Board of the cancellation of the 1896 agreement relating to traffic between Southern Mahratta Railway stations and Bombay. The necessity for the notice being that on the representation of the West of India Portuguese Railway to the Secretary of State for India through the Foreign Office in London, the India Office directed the Southern Mahratta Board to quote rates from stations on their system to Murmugao, similar to those in force between Great Indian Peninsula and Southern Mahratta Railways. The object apparently was to treat the all rail and the *combined rail and sea routes* on a footing of equality, or in other words, to apply the same telescopic or sliding scales of rates up to junctions with the Great Indian Peninsula Railway and on the combined distance over the Southern Mahratta and West of India Portuguese Railways to Murmagao, leaving the Steamer Company and the Great Indian Peninsula Railway to quote such rates as they liked. It may be mentioned that the Great Indian Peninsula had no minimum at the time and the Steamer Company was of course free to quote any rate it thought fit to charge. The Southern Mahratta authorities in India, however, addressed the Great Indian Peninsula Railway with a view to coming to an agreement on the basis of the shortest route agreement of 1896, which had, previous to the cancellation of the agreement regarding Bombay traffic, applied to other traffic interchanged between the Great Indian Peninsula and Southern Mahratta Railways, except on traffic to and from Bombay. The Bombay agreement being now cancelled, it was suggested on behalf of Southern Mahratta Railway, that the shortest route agreement should now apply to Bombay traffic as well, but this was qualified by the combined proposal of the West of India Portuguese and Southern Mahratta Railways that the actual distance by land between Murmagao Harbour and Bombay should be reduced from 253 miles to 88 miles in the case of sea route, which had the effect of considerably reducing the distance by the sea route, as the following example will show :—

I.—*Raibag to Bombay.*

	Actual distance
Raibag to Poona	191
Poona to Bombay	119
TOTAL .	310
Raibag to Portuguese Frontier	106
Portuguese Frontier to Murmagao	51
Murmagao to Bombay	253 (by land).
TOTAL .	410
Miles in favour of railway route	100

II.—*As proposed by Southern Mahratta and West of India Portuguese Railways.*

Raibag to Bombay by Railway	310
Raibag to Portuguese Frontier	106
Portuguese Frontier to Murmagao	51
Murmagao to Bombay	88 (by sea)
TOTAL .	245
Miles in favour of the sea route	65 miles.

The Great Indian Peninsula Railway were not prepared to accept this position, and, therefore, competition was resorted to by both parties. The Great Indian Peninsula Railway joined hands with the Madras and the Nizam's Railways and started competition for the Southern Mahratta traffic for Bombay *viâ* Raichur and Guntakul and *viâ* Wadi and Bezwada and for Bangalore traffic *viâ* Arkonam and Raichur. The Southern Mahratta Railway retaliated by quoting block rates against junctions with the Madras lines, which not only affected Bombay traffic from the Southern Mahratta Railway but traffic to Madras as well. It will be observed that the course of action which was once directed against the Murmagao route by the Southern Mahratta Railway was now directed against the all rail route. The position was unsatisfactory from all points of view. The Government of India, through the Consulting Engineer for Railways to the Bombay Government, represented to the railways that as there was some doubt as to the intention of the Secretary of State in the matter, his distinct orders should be carefully enquired into at once with a view to the preparation of a schedule of through rates such as he had ordered and that until a settlement of the dispute was arrived at, the railways concerned should combine to prevent quoting of competitive rates, either harassing to the traders, or involving rates that did not pay. The Consulting Engineer, however, could do no further than record his views. Meanwhile, reference was made by the respective railways to their Boards in London for correct interpretation of the orders of the Secretary of State. The London Boards took action in December 1898 and laid down that the conditions and special scales of rates for Bombay traffic existing under the 1896 agreement recently cancelled, should be accepted and kept in force until questions between companies had been carefully considered and settled and that the same scales of rates were to apply *viâ* Murmagao. The matter rested here till the London Boards came to a settlement in 1899.

1898-99 Agreement between the Madras and South Indian Railways.

While this was the state of affairs in regard to competition for traffic between the Southern Mahratta country and Bombay, the Madras and South Indian Railways came to the following agreement :—

"(1) That all traffic from South Indian Railway stations to Madras Railway stations and *vice versâ*, *i.e.*, traffic arising and terminating on the said railways, to be sent by the shortest route for direct interchange between the two companies, rates by other junctions for such traffic in through booking being cancelled. For the purpose of this clause, *viâ* Guntakul-Dharamvaram shall be considered an available South Indian Railway route as regards booking from stations on the section between Pakala and Dharamvaram.

(2) That any local rates of either railway which interfere with the interchange of traffic in the manner provided in clause (I) to be cancelled, the Claims Arbitration Committee to

decide in the event of difference of opinion arising under this clause.

(3) That traffic between South Indian and the Southern Mahratta stations only (not beyond) to be competitive.

(4) That the South Indian Railway agree to cancel all *viâ* Dharamvaram rates other than class rates if it is shown that such rates are being used to attract traffic for Bombay or any stations on the Great Indian Peninsula Railway *viâ* Murmagao or any other Southern Mahratta Railway route, either by rebooking or by any other method; any difference of opinion under the clause to be referred to the uninterested members of the Claims Arbitration Committee for settlement.

(5) That traffic between stations north of Raichur, and South Indian Railway stations to be carried by the following routes :—

To and from stations between Pakala (exclusive) and Dharamvaram *viâ* Guntakul and Raichur. To and from Villapuram (exclusive) and Tiraputi, *viâ* Renigunta.

To and from stations east of Renigunta, *viâ* Renigunta.

To and from stations between Trichinopoly Fort exclusive and Erode, *viâ* Erode and Arkonam.

To and from all other stations of the South Indian Railway and lines worked by that railway, *viâ* Arkonam.

(6) That the cheapest rate *viâ* any competing route to be applied to the joint routes laid down in the preceding paragraph, and when such reduced rates are applied, the gross receipts excluding terminals to be divided according to the mileage worked over by the companies interested.

(7) All other traffic to be apportioned, according to the rate lists of each railway interested, by the route laid down in paragraph 5.

In any case traffic is to be divided by the joint route laid down, whether it travels by that route or not."

Modification in the agreement between the E. I. Ry. and the Calcutta Port Commissioners.

In 1898, there was a modification in one of the clauses of the agreement between the East Indian Railway and the Port Commissioners, for the performance by the latter of terminal services on traffic to and from the Kidderpore Docks in Calcutta. The East Indian Railway had asked for the provision of additional accommodation for their Loco staff at Dock junction and for improved water supply for their Locomotives and for the sorting and marshalling of empty wagons before the trains were made over to the East Indian Railway. The Port Commissioners who worked the Docks asked for payment of one pie per maund on coal traffic for the additional facilities asked for. The East Indian Railway objected to this payment, particularly on the ground that the payment of one pie per maund to the Port Commissioners would mean that the East Indian Railway's power to give reduction in the freight to the public would be lessened to this extent. But the Port Commissioners pressed for this payment which was already made on all other traffic but coal on the following grounds :—

> "(1) The services rendered by them to coal other than handling, and of which the East Indian Railway are relieved, cost the Commissioners 1·2 pie per maund, and that if the demand for the sorting of wagons be conceded, this rate will be increased and a further expansion of the traffic will not reduce it, as further capital and other expenditure will be necessary to meet it.
>
> (2) The contention that, owing to such demands as are made, the concession of equal rates to Kidderpore and Howrah must be reconsidered, is met by showing that this concession is not a term of the agreement, and that it was an essential one without which the Docks would not have been sanctioned by the Secretary of State.
>
> (3) It has been shown that were it not for the existence of the Docks, the present coal export trade could never have been founded unless the East Indian Railway had incurred a capital expenditure, the incidence of which, on an export of one million tons, would have exceeded the extra cost to the East Indian Railway of running to Kidderpore."

The East Indian Railway eventually agreed to allow the Port Commissioners one pie per maund on coal booked to Kidderpore Docks, the same as they paid on all other traffic already.

Running powers over the O. and R. Ry. metre gauge link from Burhwal to Cawnpore.

The metre gauge link between Burhwal (the junction between the Bengal and North-Western Railway and the Oudh and Rohilkhand Railway, at a point where the Bengal and North-Western Railway crosses the river Gogra by a bridge, at a distance of 37 miles from Lucknow and 83 miles from Cawnpore) and Cawnpore was provided in order to facilitate communication between metre gauge systems north of the Oudh and Rohilkhand Railway and south of the Ganges. This link connected the Bengal and North-Western Railway, on the metre gauge, with the Rohilkund and Kumaon Railway at Lucknow and with the Rajputana-Malwa Railway at Cawnpore and was built by the State and included in the administration of the Oudh and Rohilkhand Railway. The specific object of the procedure was to keep a control by the Oudh and Rohilkhand Railway on the local traffic on this length and on purely broad gauge traffic legitimately belonging to the Oudh and Rohilkhand Railway. The Bengal and North-Western Railway were given running powers for the purpose of through traffic from the Bengal and North-Western Railway to Rohilkund and Kumaon Railway, and from the Bengal and North-Western Railway to Rajputana-Malwa Railway and *vice versâ,* for instance, the Bengal and North-Western Railway would have no right to carry traffic over this link originating at say Lucknow and terminating at Cawnpore, or the traffic from any station on the Oudh and Rohilkhand Railway beyond Lucknow to say any station on the East Indian Railway beyond Cawnpore. It was to provide against such traffic being competed for by the metre gauge that the link was built by the Government and not allowed to be made by the Bengal and North-Western Railway. Purely metre gauge traffic was intended to be carried over this link, but the Bengal and North-Western Railway did not accept this view and claimed that the traffic from Bengal and North-Western Railway to stations on the link should belong to them and also that they should be allowed to carry the traffic from the Bengal and North-Western Railway to the Great Indian Peninsula Railway up to Cawnpore in their own trains. The Oudh and Rohilkhand Railway were not prepared to accept this position and there was a dispute between the two lines, but in order that the exercise of the running powers may not be delayed a provisional agreement was entered into, subject to settlement of the dispute later on.

The following was provided, in regard to control of rates, and payment for running powers in respect of the traffic for which the running powers were allowed, in the provisional agreement :—

"I. The Bengal and North-Western Railway Company shall run and haul its trains and traffic over the Oudh and Rohilkhand metre gauge link ; the Oudh and Rohilkhand Railway arranging to provide the staff necessary to deal with the trains and traffic at all stations between Burhwal and Badsanagar, and between Amausi and Cawnpore inclusive on the railway aforesaid, allowing the Bengal and North-Western Railway the use of its accommodation at these stations.

"II. The Bengal and North-Western Railway shall have power to quote through rates from and to *viâ* any station on its system and connected railways to and from *viâ* any station on railways reached *viâ* Cawnpore, subject to the following minima tolls to be credited to the metre gauge link between Burhwal and Cawnpore and the following provisions :—

"(*a*) All traffic to stations Rewari to Ferozepore a toll of Re. 0-2-9 per maund."

"(*b*) For grain and seeds, salt and timber, and articles coming under the Oudh and Rohilkhand 125 miles sliding scale, toll to be paid between Burhwal and Cawnpore, to be Re. 0-1-4 per maund, and for rice and sugar, jagree and Aal root, and articles coming under the Oudh and Rohilkhand Railway 166 miles sliding scale, the toll to be Re. 0-1-8, provided the distance carried on the Bengal and North-Western Railway did not exceed 81 miles."

"(*c*) For all special traffic carried a greater distance on the Bengal and North-Western Railway than 81 miles, the toll shall be Re. 0-1-8 per maund."

"(*d*) For ordinary class goods the classified rates charged on the Oudh and Rohilkhand to be paid as a toll.

'(e) The Bengal and North-Western Railway not to compete with the Oudh and Rohilkhand Railway for public traffic to or from any station on the standard gauge railways east of Moghalsarai, or endeavour to carry such traffic to the detriment of the interests of the Oudh and Rohilkhand Railway.

"In consideration of these running powers, the Bengal and North-Western Railway to pay to the Oudh and Rohilkhand Railway 80 per cent. of the gross traffic earnings of the Bengal and North-Western Railway trains running between Burhwal and Daliganj, and Aishbagh and the point of junction with the Bombay, Baroda and Central India Railway at Cawnpore excepting in the case of the tolls provided for above, the whole of which was to be credited to the Oudh and Rohilkhand Railway after deduction of the amount due to the Rohilkund and Kumaon Railway, which was to be calculated on mileage or any such basis as was agreed upon."

Subsequently a provisional agreement was made in connection with Rohilkund and Kumaon Railway traffic to be treated the same as the Bengal and North-Western Railway traffic. These agreements were sanctioned by the Government of India provisionally.

1898-99 Settlement between S. M., G. I. P. and W. I. P. Rys. in the matter of routing of traffic between Bombay and S. M. Ry. stations.

The competition between the Southern Mahratta Railway and the Great Indian Peninsula Railway was, as previously stated, temporarily stopped by reversion to the rates under the 1896 agreement pending settlement of the whole question between the Boards of the railways concerned. In February and March 1899, six meetings were held between the Directors of the Southern Mahratta, Great Indian Peninsula and the West of India Portuguese Railways and the Government Director of the Indian Railway companies, deputed from the India Office to represent the Government, was also present and he took part in the proceedings of each day. It was felt from the beginning that any fair and equitable solution of the problems could only be attained by reasonable admissions on the part of the contending railways. The wishes of the Secretary of State were very clearly stated and they were to the effect that in any scales of rates adopted by the Southern Mahratta Railway Company, the same facilities were to be given to the ports of Murmagao and Bombay. Hitherto, the scales were on a sliding basis which frequently overlapped and rates on cumulative or telescopic basis were suggested.

It may be necessary to explain what the two scales mean. The difference between sliding and telescopic rates is that under the former the lowest rate chargeable on the longer distances applies on the whole distance, thereby necessitating the application of the differential rule (such as it would be necessary if a rate of $\frac{1}{5}$th pie per maund per mile were charged for up to 100 miles and say $\frac{1}{6}$th pie for the entire distance for traffic carried for more than 100 miles; or in other words, if say the rate charged at $\frac{1}{5}$th pie for 100 miles was 20 pies and for 110 miles

at $\frac{1}{6}$th pie 18 pies, the rate for all distances from 110 to 100 and even less would have to be made 18 pies under the differential rule).

In the case of telescopic scale, the charge for varying distances are the same both for short and long lead traffic in the beginning, or in other words, the reduction is for additional distances (for instance, the rate for 110 miles under telescopic scale would be $\frac{1}{5}$th pie for 100 miles and at $\frac{1}{8}$th pie for the additional distance of 10 miles). Although at one time in India, sliding scales were very much in favour and considered most useful in developing long distance traffic, telescopic rates have since been found more practical as they tend to minimise the loss on comparatively short hauls, while introducing a general scale for both long and short hauls.

The following telescopic scale of rates for *special class traffic* was adopted in through booking between Southern Mahratta Railway stations and

(*a*) Murmagao.
(*b*) Bombay *viâ* Poona.
(*c*) Bombay *viâ* Hotgi.

	Pie per maund per mile.
1 to 100 miles	·33
101 to 200 „	·20
201 to 300 „	·16
301 to 400 „	·12
401 miles and over	·08

These scales were applied on the through distances to Bombay *viâ* Poona and *viâ* Hotgi over the Great Indian Peninsula and Southern Mahratta Railways, and in the case of Murmagao on the through distance over the Southern Mahratta and West of India Portuguese Railways. In addition to these rates the following terminals were to be allowed to each railway :—

6 pies to the Great Indian Peninsula,
3 pies to the Southern Mahratta, and
6 pies to the West of India Portuguese Railway.

The routing of the traffic was to depend on the rates fixed at this scale, plus the steamer freight from Murmugao to Bombay in the case of the sea route, that is, whichever route was rendered cheaper by the application of this scale for special class goods, that route was also adopted in the case of other goods. The Southern Mahratta Railway further agreed to quote the same scale of rates in through booking between their stations and the Madras Railway *viâ* Guntakal, Bangalore and Renigunta and South Indian Railway *viâ* Dharmavaram and Katpadi as for Bombay traffic. For traffic to Bombay from junctions of Guntakal and Bangalore, equal rates were quoted by all routes (*viz.*, by broad, metre and the sea route) and the same arrangement was also agreed to for Bezwada for traffic to Bombay.

Another agreement was come to between the Great Indian Peninsula, Madras, South Indian, and Southern Mahratta Railways to the effect that all other traffic than that to and from Bombay was to be carried by the shortest route, subject to the condition that where the distance on the longer route was not more than 20 per cent. greater than the distance by the shortest route, the traffic could be sent by the longer route at the rates in force by the shorter, provided that thereby a break of gauge was avoided. The rates were in all cases, both in the case of traffic between Bombay and Southern Mahratta Railway stations and in the case of all other traffic where the shortest route rate was applied by the longer route, were to be divided on mileage after deduction of terminals. This Bombay agreement was, however, to be in force for one year as an experimental measure.

Agreement between G. I. P., I. M., E. I. and B. N. Rys. re traffic from Agra and viâ and Cawnpore and viâ to Nagpur and adjacent stations and vice versâ.

Another important agreement concluded in 1899, was the settlement of the dispute between the railways concerned for traffic between Cawnpore and stations north of Cawnpore and Nagpur and adjacent stations on the Great Indian Peninsula and Bengal Nagpur Railways and between Agra and places reached from and *viâ* Agra and Nagpur.

The following were the routes open between Nagpur and Cawnpore and Agra and Cawnpore :—

(1) *Viâ* Itarsi over the Indian Midland and Great Indian Peninsula Railways.

(2) *Viâ* Allahabad and Jubbulpur over East Indian and Great Indian Peninsula Railways.

(3) *Viâ* Katni, Allahabad and Bilaspur over the East Indian and Bengal Nagpur Railways.

(4) *Viâ* Katni, Bina, Jhansi and Bilaspur over Indian Midland and Bengal Nagpur Railways.

Route No. (3) had the shortest distance between Cawnpore and Nagpur and route No. (1) between Agra and Nagpur. The first principle adopted in this agreement was that when the excess distance by a longer route, over and above that by the shortest route, was more than 33 per cent., such longer route must retire from competition. The distances were as follows :—

Route No. I viâ *Itarsi over the Indian Midland and Great Indian Peninsula.*

	Miles
Cawnpore to Nagpur	806
Agra to Nagpur	803

Route No. II viâ *Allahabad and Jubbulpur over East Indian and Great Indian Peninsula Railways.*

	Miles.
Cawnpore to Nagpur	**932**
Agra to Nagpur	**1,089**

Route No. III viâ *Katni, Allahabad and Bilaspur over the East Indian and Bengal Nagpur Railways.*

	Miles.
Cawnpore to Nagpur	745
Agra to Nagpur	902

Route No. IV viâ *Katni, Bina, Jhansi and Bilaspur over Indian Midland and Bengal Nagpur Railways.*

	Miles.
Cawnpore to Nagpur	849
Agra to Nagpur	846

After a great deal of discussion it was agreed to divide the traffic equally between these routes, so far as Agra to Nagpur and Cawnpore to Nagpur traffic were concerned. This arrangement was also to apply in the case of traffic in jagree from the Oudh and Rohilkhand Railway stations *viâ* Cawnpore to Nagpur as well as to traffic from *viâ* Agra (from the Bombay, Baroda and Central India Railway) to Nagpur.

As to traffic on the Bengal Nagpur Railway stations east of Nagpur, the only routes to be taken into account were those *viâ* Katni and Allahabad and *viâ* Katni, Bina and Jhansi. Similarly, for stations west of Nagpur on the Great Indian Peninsula Railway, the routes *viâ* Jubbulpur and *viâ* Itarsi were only to count. To carry out this agreement the following allotments were made :—

From	To	—
Nagpur and *vice versâ*	Agra and *viâ* and Cawnpore and *viâ*.	(1) *Viâ Itarsi.*—All traffic to Agra and *viâ*. Oranges to Cawnpore, Indigo from Cawnpore and *viâ*, ½ potato traffic from *viâ* Cawnpore. (2) *Viâ Jubbulpore.*—All class goods, grain and seeds, wheat, spirits and rum from Cawnpore and *viâ*. All potato traffic from Cawnpore itself and ½ from *viâ* Cawnpore. Jagree and sugar from *viâ* Cawnpore (other than from and *viâ* Oudh and Rohilkhand Railway). (3) *Viâ Katni-Marwara.*—All traffic from Agra and *viâ* and all traffic to Cawnpore and *viâ*. ½ piece goods traffic to Cawnpore and *viâ*. Piece goods, groceries and soojee from Cawnpore and *viâ*. (4) *Viâ Katni, East Indian Railway.*—All sugar and jagree from Cawnpore; printed books from *viâ* Cawnpore ½ piece goods traffic to Cawnpore and *viâ*.

From	To	Allotment.	Remarks.
(*b*) Bengal Nagpur Railway stations, Mehdibagh to Bilaspur.	Agra and *viâ*, Cawnpore and *viâ* and *vice versâ*.	Allotted to *viâ* Katni, ½ *viâ* Indian Midland Railway *viâ* Jhansi and ½ *viâ* East Indian Railway route.	The rates by the allotted route to be 3 pies lower than by the alternative route.
(*c*) Bengal Nagpur Railway stations, Paraghat to Asansol and Ghutuk to Rupound.	Ditto	Allotted $\frac{9}{16}$ths to the East Indian Railway and $\frac{7}{16}$ths to Indian Midland Railway routes.	The traffic between Cawnpore *viâ* Cawnpore and beyond and between Tundla and stations above was allotted to the East Indian Railway; all traffic between Agra and *viâ* Agra for Rajputana-Malwa Railway and beyond allotted to the Indian Midland Railway route.
(*d*) Great Indian Peninsula stations on the Nagpur Branch (except Nagpur).	Cawnpore and *viâ* and *vice versâ*.	Allotted $\frac{9}{16}$ths to the *viâ* Itarsi and $\frac{7}{16}$ths to the *viâ* Jubbulpore and East Indian Railway routes.	Rates to be equal by both the routes, *viz.*, *viâ* Itarsi and *viâ* Jubbulpore and lower than *viâ* Katni.
(*e*) Ditto	Agra and *viâ* and *vice versâ*.	Allotted to *viâ* Itarsi route.	Rates to be lower *viâ* Itarsi than by any other alternative route.
(*f*) Katni, East Indian Railway and Katni-Marwara.	Agra and *viâ* and Cawnpore *viâ* and *vice versâ*	½ to East Indian Railway and ½ to Great Indian Peninsula route.	The rates by the allotted route to be lower by one anna.

At a viceregal conference which assembled at Simla on 15th August 1899 it was determined to constitute a small travelling commission to enquire into local interests affecting railway schemes. The following remarks appear in the Government of India Administration Report on Railways for 1899-1900:—

Railway commission to consider proposals regarding division of the East Coast State Railway between the B. N. and the Madras Railways for administrative purposes.

"The travelling commission is to sit and take evidence in public and will be open to interested parties. If the results of the investigations carried out by the commission appointed for this year should prove satisfactory, it is possible that such a commission may become part of the regular machinery for the administration of railways in the future, and it may develop into a permanent railway commission as is described in chapter V of the Indian Railways Act IX of 1890."

"The first sitting of the commission took place in the Council Hall in Bombay on 13th November 1899 to receive statements and evidence relative to a proposal for the construction of the Bombay Port Trust Railway. The Government of India agreed with the report of the commission that the necessity for the proposed railway was established, and that the new line, including the connection with the Bombay, Baroda and Central India Railway, should be constructed and worked by the Great Indian Peninsula Railway Company."

"Subsequently, the railway commission assembled in Madras in December 1899 to consider the point at which the new through line between Calcutta and Madras is to be divided for purposes of management and control; and it has been settled to fix Vizagapatam as the point of division with the reservation that power will be retained to resume at any time, on six months' notice, the working of the whole or any part of the length from Vizianagram to Vizagapatam, giving running powers instead. An agreement has also been arrived at between Madras and Bengal Nagpur Railway Companies to prevent artifical diversion of traffic by unequal rates, which will secure the interests of the districts through which the line passes."

This commission also referred to the rates to be charged between the Bengal Nagpur Railway and the Madras Railway in respect of traffic between stations on the East Coast Railway, after this railway ceased to be worked independently and was divided between Bengal Nagpur and Madras Railways. When the East Coast Railway was proposed to be divided between the Madras and Bengal Nagpur Railways, the Madras Government advocated the Madras Railway taking over the line as far as Cuttack but it was considered advisable that Vizagapatam should be the junction point of the two railways. To meet Madras Government views as far as possible it was agreed that the Madras Railway should have the right to quote rates from and to stations on its own system to and from stations on the Vizagapatam-Cuttack section which was handed over to the Bengal Nagpur Railway. In return for this concession the Bengal Nagpur Railway were given the same right to quote rates to and from stations on the Bezwada-Vizagapatam section which was handed over to the Madras Railway. It was thought that this arrangement would prevent artificial diversion of traffic by unequal rates and that the local interests of the districts, through which the East Coast Line passed, would also be secured by such an arrangement.

1900. One of the important events which took place in 1900 was the appointment of a commission to receive statements and evidence and to consider the point of junction between the North Western Railway (5'-6" gauge) and the Jodhpur-Bikaner Railway (3'-3⅜" gauge). The report of the commission was published for the information of the public. The final recommendations of the commission were as follows :—

Railway Commission to determine point of junction. "The conflicting local interests are for the present narrowed to a consideration of the importance and natural direction of the flow of the trade of the Nara Valley, not very large at present, but likely to increase by the opening of the irrigation works of the Jharmo and other *between the North Western Ry. and the Jodhpur-Bikaner Ry.*

canals, aided by the colonisation scheme. The evidence regarding the direction this traffic is likely to take is conflicting, but we think that in normal years the larger proportion will be westward, to the port, and that if there were only this local traffic to be considered, the Karachi merchants would be quite justified in endeavouring to carry it to their port without any break of bulk. But the through traffic, which is certain to develop by the advent of metre gauge, which that system claims to carry in its wagons as far as possible both towards and from the sea port with the hope no doubt of ultimately carrying it all the way, appears to us to be still more important, and inasmuch as we regard their ability to so carry the traffic as a determining factor in influencing the flow of the trade from the North-West of India and Rajputana, and as likely to pave the way for the ultimate advance of the metre gauge system when the necessity arises, we are of opinion that the memorialists of Karachi have failed to show that the proposed conversion would be detrimental to the interests of the public generally, or even to the real interests of the Karachi merchants, and we therefore recommend that the metre gauge terminus be removed from Shadipalli to Hyderabad."

The commission also recorded the opinion that looking to the established metre gauge system in the country the evils of the broken gauge could only be finally eliminated by the admission of that system to the sea port when the traffic justified it. The reasons for reference to this commission are that several important points in connection with the railway rates in force in India generally were brought forth in the evidence before the commission.

For instance, the Bombay, Baroda and Central India Railway representative pointed out that although the rates were in favour of Karachi from Bhatinda itself and from all stations North of Bhatinda, the bulk of the seeds traffic continued to find its way to Bombay; while on the other hand Karachi secured the bulk of the wheat traffic.

Reference was also made to the possibility of the Bombay, Baroda and Central India Railway quoting block rates against Karachi in the case of traffic from Rajputana-Malwa Railway *viâ* Marwar and Shadipalli junctions. The Bombay, Baroda and Central India Railway representative pointed out that an arrangement had already been come to with the Jodhpur-Bikaner Railway whereby the rates to Karachi and Bombay respectively from stations north of Marwar junction as also from stations on the Rajputana-Malwa Railway south thereof as far as Nana would be equal to both ports, *viz.*, to Bombay and to Karachi.

One of the difficulties of the broken gauge pointed out by the Bombay, Baroda and Central India Railway was that the merchants in Bombay in respect of arrivals *viâ* Bombay, Baroda and Central India route would not remove part of the consignment but would wait till each consignment was complete. It was also observed that a consign-

ment of 50 tons of wheat might be transferred into 4 broad gauge wagons and as 4 wagons did not always arrive at destination together the Railway had to keep the goods until the whole consignment had arrived.

A very important admission was made by the President of this commission, Sir Frederick R. Upcott (then Mr. Upcott, Secretary to the Government of India, Public Works Department), in his observation to the Deputy Manager, North Western Railway, who had, in his written statement to the commission, observed that it was not to the interest of the Government that it should be in the power of a guaranteed line to divert traffic from a State line. The President of the Commission said as follows :—

"I wish to give public expression to my opinion — which, I think, it is right should be given—that the Government of India do not as a matter of fact consider the interests of either State railways or guaranteed railways when they conflict with the interests of the country generally; their view is that if there is a monopoly in any part of India and if the interests of the country are against that monopoly, the Government of India are right in helping to abolish the monopoly."

Another important point disclosed in the evidence was that it was the experience of railway routes with a break of gauge that when rates were equal traffic would keep to the unbroken gauge, but that if rates were favourable to the broken gauge traffic would go to the broken gauge. This statement was based on the experience of the Bombay, Baroda and Central India and the Southern Mahratta Railways.

Purchase of the G. I. P. by the State and the amalgamation of the G. I. P. and I. M. Rys.

The Great Indian Peninsula Railway was purchased by the State on 1st July 1900 and by indentures made on 1st December 1900 between the Secretary of State for India in Council and the Great Indian Peninsula and Indian Midland Railway Companies, it was agreed that the former company should maintain, manage and work the Great Indian Peninsula and Indian Midland Railway systems as one undertaking.

B. N. Ry. entrance into Calcutta (Howrah).

The Bengal Nagpur Railway on 5′-6″ gauge got an entrance into Howrah giving direct communication by the East Coast Railway between Howrah and Madras and Southern India and between Howrah and Bombay.

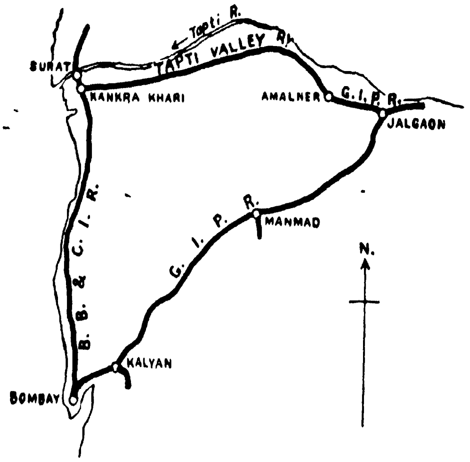
G.-M. Ry.

The Ghaziabad-Moradabad Railway on 5′-6″ gauge giving direct access to the important trade centre of Delhi was also opened in this year.

The entrance of the Bengal Nagpur Railway into Howrah in 1900 enabled them to obtain direct access for the important traffic in grain and seeds from the Central Provinces to the port of Calcutta and to reduce the distances from the Central Provinces to Calcutta by 61 miles as compared with the distances by the former route *viâ* Asansol which route now lost the traffic to Calcutta from the Bengal Nagpur Railway.

The Tapti Valley Railway and Hyderabad-Godavari Valley Railway were also opened for traffic in 1900.

Nº 22.



Tapti Valley Railway as an alternative route for cotton traffic between Khandesh and Bombay.

The opening of the Tapti Valley Railway provided an alternative route, though longer, for traffic in cotton from Khandesh to Bombay. The distances from Jalgaon, Chalisgaon and Amalner to Bombay *viâ* Great Indian Peninsula direct route and *viâ* Tapti Valley Railway and Bombay, Baroda and Central India Railway compare as follows :—

	By Great Indian Peninsula route.	*Viâ* Amalner-Tapti Valley Railway and Bombay, Baroda and Central India Railway.
	Miles.	Miles.
Jalgaon	261	353
Chalisgaon	204	411
Amalner	296	318

Ordinarily, a newly opened longer route cannot force down the rates of an existing shorter route having entire command of the distance from the station of origin to destination, but the prevalence of high rates for cotton on the Great Indian Peninsula Railway, specially manipulated and sanctioned to prevent unnecessary reduction in rates to the sacrifice of revenue of the railway, made the position of the shorter Great Indian Peninsula route rather weak on the opening of the alternative longer route. The classification for goods adopted by the Tapti Valley Railway was the Bombay, Baroda and Central India Railway classification. This classification was second class for cotton and as there was a special low rate for cotton from Surat to Bombay by the Bombay, Baroda and Central India Railway, in competition with the sea route, the combination of the second class rate and of this special rate from Surat to Bombay tended to make the through rate by this route cheaper than that by the direct Great Indian Peninsula route. The Great Indian Peninsula Railway made a representation and a meeting was held between the representatives of the Great Indian Peninsula, and Bombay, Baroda and Central India Railways and Messrs. Killick, Nixon and Company, Managing Agents of the Tapti Valley Railway, and the Consulting Engineer for Railways to Government of Bombay, in February 1900. The Great Indian Peninsula Railway asked that the classification of cotton on the Tapti Valley Railway should be third class instead of second class. While this was accepted as a reasonable solution of the problem to keep up rates by the Great Indian Peninsula Railway it was pointed out on behalf of the Tapti Valley Railway that the higher classification would not be fair to the mills in Surat, Broach, Ahmedabad, etc. It was, therefore, agreed that while the third class rate for cotton full pressed would apply on the Tapti Valley Railway generally an exception would be made in the case of cotton when booked for *bonâ fide* use of the mills at Surat, Broach, Baroda, Nadiad, Ahmedabad, Asarva, Wadhwan, etc.

Agreement between G. I. P., T. V. and B., B. and C. I. Rys.

It was also agreed that the traffic between Bombay and Amalner (the junction between the Great Indian Peninsula and the Tapti Valley Railways) would be divided in ratio 100-192 to the Great Indian Peninsula and 92-192 to the Bombay, Baroda and Central India and Tapti Valley Railways. In regard to traffic between Bombay and stations on the Tapti Valley Railway, it was accepted that the Great Indian Peninsula Railway had no right to such traffic *viâ* Amalner even for such stations for which the Great Indian Peninsula offered the shortest route—the traffic originated on the Tapti Valley Railway and their right to carry it for the longest distance possible was recognised. A very important concession to the Great Indian Peninsula was the charging of the third class rate for cotton on the Tapti Valley Railway which enabled them to maintain the high rates without any diversion of traffic to the alternative route.

The opening of the Hyderabad-Godavari Railway afforded railway communication to the important cotton growing districts through which it runs and the question of rates for cotton from this area to Bombay was the subject matter of discussion between the Great Indian Peninsula and the Hyderabad-Godavari Valley Railways which was settled by an agreement in 1901.

1900.

Results of general reduction in rates.

A general reduction was made in the Great Indian Peninsula Railway goods rates in 1898, the results of which were seen in 1900. It may not be out of place to mention here that prior to 1898 the policy of the *for merchandise (other than cotton, piece goods and coal), on the G. I. P. Railway.*

Great Indian Peninsula Railway was to charge high rates, which not only had the effect of making that railway lose traffic at competitive points, but retarded the development of its local traffic as well. The high rates of the Great Indian Peninsula Railway were subject of comment by the public. In 1898, general reductions were made in the rates for all classes of merchandise, except cotton and piece goods, and low scales of rates were introduced, both in regard to maund rates, which were applicable, alike to goods carried in wagon loads as well as in small lots, and wagon rates, especially for long distance despatches over 300 miles.

It was held that the lowest maund rates for grain, etc., should apply on actual weight seeing that the trade of India was principally in the hands of small dealers, and that if they were to be encouraged, they should get the benefit of the lowest rates in order especially to develop traffic even at road side stations, which constitute the largest number of Railway Stations in India, and where there is scope for petty dealers only.

That the results justified these reductions will be seen from the following comparative figures. The figures of general merchandise have been given, excluding coal, as the coal rates were separately treated, for which Government scales were applied.

Year.	Net earnings.	Tons.	Rate per ton mile.	Average cost of carrying one ton one mile.	Average profit for carrying one ton one mile.
	Rs.		Pies.	Pies.	Pies.
1896 . . .	1,54,05,060	1,856,000	9·21	4·05	3·92
1897 . . .	93,83,684	1,551,000	9·39	4·44	3·25
1898 . . .	1,41,02,053	2,056,000	8·05	3·57	3·48
1899 . . .	1,56,57,520	2,279,000	7·70	3·42	3·52
1900 . . .	1,65,67,213	2,322,000	7·50	3·28	3·54

It will be seen that the reduction in the rates was at once followed by an expansion in the traffic, although the average profit of carrying one ton one mile was greater in 1896 than in either 1899 or 1900; this loss was no doubt due to the heavy reductions, but at the same time it is to be observed that with the increase in traffic the average cost of haulage came down from 4·05 pies per ton mile in 1896 and 4·44 pies in 1897 to 3·42 pies in 1899 and 3·28 pies per ton mile in 1900.

Another most important feature to be brought to notice is that the avowed object of introducing low scale of rates by the Great Indian Peninsula Railway was to give an impetus to the development of long distance traffic, and that this object was attained is evident from the fact that while the average lead of goods carried on the Great Indian Peninsula Railway was 220 to 221 miles in 1896 and 1897, it was 249 miles in 1899 and 238 in 1900.

The correct comparison is between the figures of 1896 and 1897 with those of 1899 and 1900, because—

(1) The reductions did not apply to the whole length of the year 1898. They were introduced with effect from October 1898. The year 1898 was, therefore, a year of both high and low rates. The average rate of that year was however also low as there was almost immediate expansion of traffic within a short time of the low rates being introduced, which were well advertised beforehand.
(2) The reduced rates were in full operation during 1899 and 1900.
(3) The actual amalgamation of the Indian Midland and Great Indian Peninsula Railways did not take place till December 1900, and, further, the adjustment of rates due to the amalgamation were not made till 1901.

So the results of 1899 and 1900 were not the result of the amalgamation but purely of the reductions.

It may be said that although the traffic in 1900 was greater than that of 1896 by 25 per cent., the net earnings were only more by 8 per cent. This is correct, but it is to be seen what the results of the net earnings were on the capital outlay and on the working expenses.

The percentage of net earnings on capital outlay was as follows:—

	Per cent.
1896	5·52
1897	5·36
1898	5·00
1899	5·48
1900	1·55

So far as these results are concerned, only the year 1899 should be taken into consideration in comparison with the results of the previous years, because in 1900 the capital jumped up at once from £285,549,756 in 1899 to £427,773,327 in 1900, owing to the inclusion of £122,441,611 for premium paid for the purchase of the line by the Government. Thus in comparing 1899 with 1896 it is seen that in 1896 on a capital outlay of £279,029,173, the high rates, but with 25 per cent. less traffic, yielded a return of 5·52 per cent., whereas in 1899 the net earnings on a capital outlay of £285,549,756 gave a return of 5·48 per cent., in spite of low rates but on a bigger traffic.

As has already been shown, the working expenses came down with an expansion in the traffic.

The results of the reductions may, therefore, be briefly summarised as follows:—

(1) There was a distinct advance in the traffic.

(2) The reductions helped to develop long distance traffic in addition to increasing the traffic generally; within 2 years the increase in weight was 25 per cent., and the average lead went up from 221 to 240 miles.

(3) With the increase in traffic the cost of hauling one ton one mile went down.

(4) The net earnings, even in 1899 (*i.e.*, in the first year of the reduced rates), were higher than those of 1896 (which had an average rate of 9·21 pies per ton mile against 7·50 pies per ton mile in 1899).

(5) In 1899 the increased traffic at a low rate paid a dividend on a larger capital (which had risen from £279,029,173 in 1896 to £285,549,756 in 1899) almost as good as earned in 1896 on a lower capital and with high rates (*viz.*, 5·48 per cent. in 1899 against 5·52 per cent. in 1896—or the difference against 1899 was ·04 per cent., practically insignificant).

1901. Entrance of the Bengal Nagpur Railway into the Jherria coal-field on equal terms with the E. I. Ry.

The question of the entrance of the Bengal Nagpur Railway into the Jheria coal fields by a branch line from Midnapur to Jherria, and of an independent route from Calcutta to Northern India, had been engaging the attention of the Government and of the Calcutta merchants for a long time, especially in view of the congestions that were taking place on the East Indian Railway. A committee was appointed to investigate the following points:—

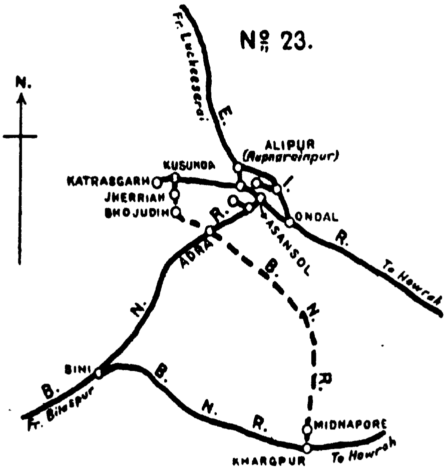
(1) The entrance of the Bengal Nagpur Railway into Jherria.

(2) The relief of the congestion of traffic on the East Indian Railway.

(3) The provision of an independent access to Calcutta from the United Provinces of Agra and Oudh.

It was accepted as the result of the enquiry by the committee, and after hearing the evidence of the mercantile bodies and of the railways interested in the question, that the Bengal Nagpur Railway should have free and independent access into the Jherria coal fields, on equal terms with the East Indian Railway, by the construction of a branch from Midnapur to Jherria.

It was proposed that the East Indian Railway should have their Grand Chord line from the north-east to the north-west, running north of the field, and that the Bengal Nagpur Railway line from Midnapur to connect with the Grand Chord should run from the south-east to the south-west, running south of the field, and that no line should run through the centre of the field, as was proposed by the East Indian Railway.



Note.—A more detailed map will be found at the end of Chapter XII.

The East Indian Railway were to construct, own and work a loop line (to be known as the outer loop) from Pathardihi to Khanodih, including the Dhanbaid-Jherria Chord, and the Bengal Nagpur Railway were to build the line from Bhoojodih junction to Mohuda, and to work and own it, and this was to be known as the inner loop.

Subsequently connections were formed between these two loops by short links, so that every colliery in the field, whether situated on the Bengal Nagpur Railway or on the East Indian Railway, could call for and be supplied with wagons of whichever Railway Company (Bengal Nagpur Railway or East Indian Railway) it desired to send coal by, *i.e.*, a colliery on the Bengal Nagpur Railway desiring to send traffic by the East Indian Railway could indent for, and obtain for loading, wagons of the East Indian Railway, and *vice versâ.*

This arrangement was alright, but at the time it was not anticipated that after the Bengal Nagpur Railway got entrance into the field they would for some time be debarred from carrying the export coal traffic to Calcutta because of their rate on the longer distance *viâ* Midnapur, falling below the minimum when effecting equalization with the rate by the shorter route of the East Indian Railway.

In connection with the congestion on the East Indian Railway, it was thought that the additional lines asked for by them were not necessary, as the congestion was found to be due to other causes, one of which was the very liberal terms in respect of wharfage and demurrage at th Howrah terminus. The line, which the East Indian Railway asked fo in 1901 (that is a chord from Burdwan to Howrah) was considered necessary some years later, and has recently been made and opened for traffic.

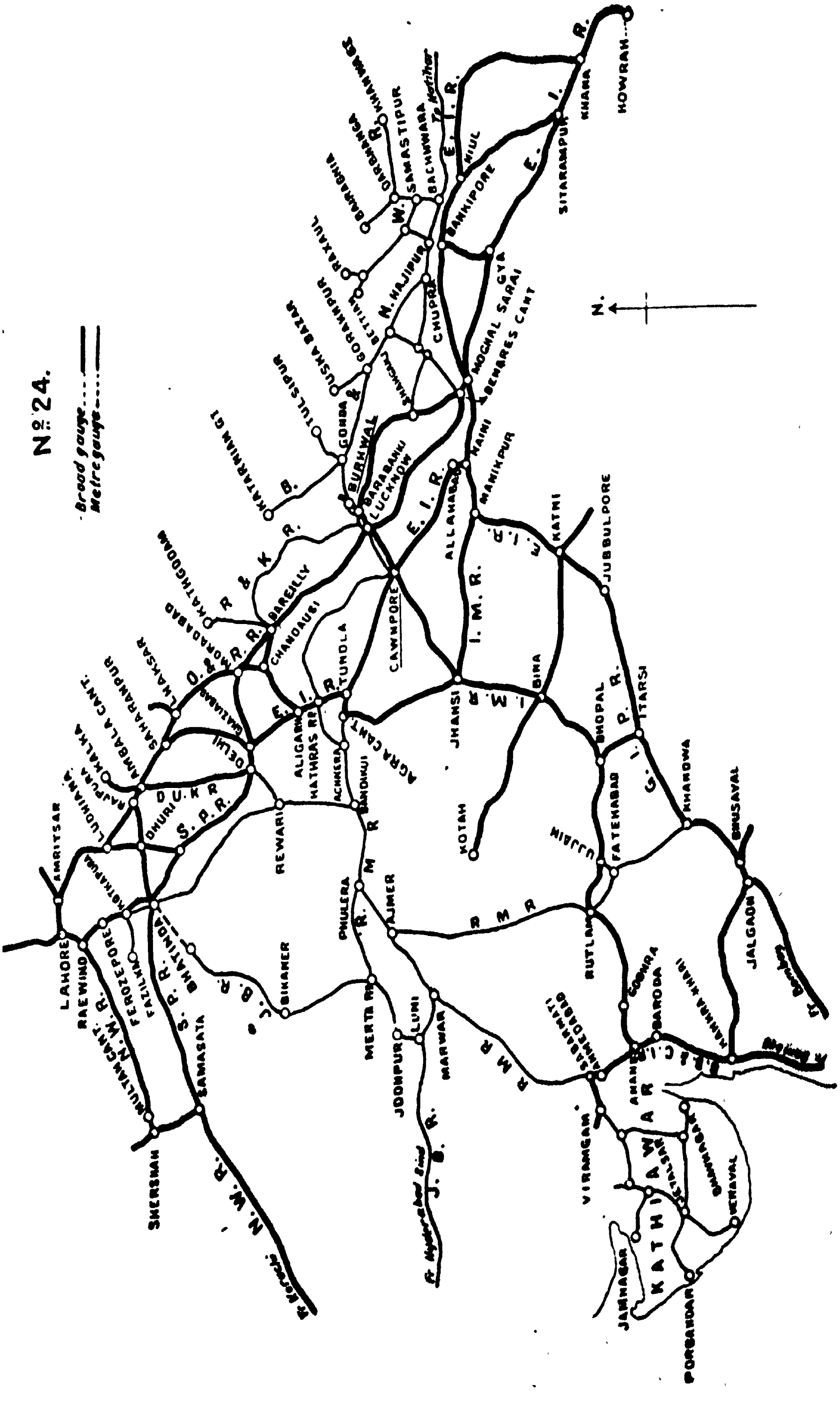
In connection with an independent line from the United Provinces to Calcutta, it was considered that a line should be constructed from Gya, in combination of the Moghalsarai-Gya line, to meet the Bengal Nagpur Railway in the south-west of the Jherria coal field (this point is now known as Gomoh, the junction between the Bengal Nagpur Railway and Grand Chord line of the East Indian Railway from Moghalsarai to Sitarampur). Both the Bengal Nagpur Railway and Oudh and Rohilkhand Railway were to be allowed running powers over this Grand Chord between Moghalsarai and the point of junction with the Bengal Nagpur Railway. This line has been made, but neither the Bengal Nagpur Railway nor the Oudh and Rohilkhand Railway have exercised running powers over it, although in times of pressure equal rates have been allowed from the United Provinces of Agra and Oudh to the Bengal Nagpur Railway Calcutta terminus at Shalimar, *viâ* Gomoh, to those in force from the United Provinces by the East Indian Railway to Howrah. The Bengal Nagpur Railway line to their present goods terminus at Shalimar was opened for traffic on 15th March 1901.

East Coast Ry.

In terms of the recommendations of the Railway commission held at Madras in 1900, the working of the Northern section of the East Coast Railway from Waltair (Vizagapatam) to Barang was made over to the Bengal Nagpur Railway, and of the Southern section from Vizagapatam to Madras to the Madras Railway, and the suggestion to give each Railway the right to quote rates from the section worked by the other was given effect to.

Revised terms between the O. and R. Ry. and the B. and N.-W. Ry. in respect of running powers exercised by the latter over the metre gauge link from Cawnpore to Burhwal.

The provisional agreement come to between the Bengal and North-Western Railway and the Oudh and Rohilkhand Railway in 1899 regarding running powers over the Burhwal-Cawnpore metre gauge link of the Oudh and Rohilkhand Railway did not give satisfaction to the authorities of the Bengal and North-Western Railway. The matter was referred by their Board of Directors in London to the Secretary of State for India, and it was the subject of discussion for a long time, until at last a meeting was held between the representatives of the two lines in December 1901 at which the Director of Traffic, the Accountant-General (Public Works Department), and the Under Secretary to the Government of India, Public Works Department (Railway Traffic Branch) were present. Broadly speaking, the settlement arrived at was on this basis: the traffic arising on the metre gauge system (*i.e.*, either on the Bengal and North-Western Railway or the Rohilkund and Kumaon Railway), which could be carried to destination in metre gauge vehicles was to be treated as wholly metre gauge traffic.


No. 24.
Broad gauge
Metre gauge
N.
HOWRAH
KHANA
SITARAMPUR
E. I. R.
KIUL
BANKIPORE
GYA
MOGHAL SARAI
BENARES CANT
To Katihar
E. B. S. R.
BACHHWARA
SAMASTIPUR
DARBHANGA
KHANWA GT
BAIRAGNIA
RAXAUL
BETTIAH
M. HAJIPUR
CHUPRA
GORAKHPUR
USKA BAZAR
TULSIPUR
GONDA
B. & N. W. R.
KATARNIAN GT
BURHWAL
BARABANKI
LUCKNOW
NAINI
MANIKPUR
ALLAHABAD
KATHI
JUBBULPORE
R. & K. R.
KATHGODAM
BAREILLY
MORADABAD
CHANDAUSI
O. & R. R.
CAWNPORE
TUNDLA
I. M. R.
JHANSI
BINA
KOTAH
BHOPAL
G. I. P. R.
ITARSI
KHANDWA
BHUSAVAL
JALGAON
Fr. Bombay
LAKSAR
SAHARANPUR
AMBALA CANT.
KALKA
RAJPURA
LUDHIANA
AMRITSAR
DELHI
GHAZIABAD
ALIGARH
HATHRAS RD.
ACHHERA
BANDIKUI
AGRA CANT.
D. U. K. R.
DHURI
S. P. R.
REWARI
LAHORE
RAEWIND
KOTKAPURA
FEROZEPORE
FAZILKA
BHATINDA
J. B. R.
BIKANER
PHULERA
AJMER
R. M. R.
MERTA RD.
JODHPUR
LUNI
MARWAR
UJJAIN
FATEHABAD
RUTLAM
GODHRA
BARODA
NANDA KHARI
SABARMATI
AHMEDABAD
ANAND
B. B. & C. I.
From Bombay
N. W. R.
MULTAN CANT.
SHERSHAH
SAMASATA
Fr. Karachi
J. B. R.
Fr. Hyderabad Sind
VIRAMGAM
KATHIAWAR
JAMNAGAR
PORBANDAR
VERAVAL
BHAVNAGAR

In detail, the terms were as follows:—

1. *Traffic from and to the Bengal and North-Western Railway, to and from stations on the link was to be carried by the* Bengal and North-Western Railway.
2. Traffic from the Bengal and North-Western Railway to the Rajputana-Malwa, Rohilkund and Kumaon, Jodhpur-Bikanir and Kathiawar Railways (all on metre gauge), or traffic *viâ* the metre gauge and *vice versâ*, was allowed to be carried in the Bengal and North-Western Railway wagons over the link.
3. Traffic from the Bengal and North-Western Railway to the Oudh and Rohilkhand Railway, to the North-Western Railway, to the East Indian Railway west of Cawnpore, to the Great Indian Peninsula Railway booked *viâ* Cawnpore broad gauge, was to be made over by the Bengal and North-Western Railway to the Oudh and Rohilkhand Railway, either at Barabanki or at Lucknow, as the Oudh and Rohilkhand Railway might notify.
4. In respect of traffic from *viâ* Cawnpore to the East Indian Railway stations east of Moghalsarai, the Bengal and North-Western Railway could carry such traffic by their route, if they could secure such traffic.
5. The Bengal and North-Western Railway were not to compete for traffic from the junctions of Benares, Shahganj, Ajodhya, Lucknow, Bareilly and Cawnpore and stations on the link to broad gauge stations west of Moghalsarai and *vice versâ*, but the Bengal and North-Western Railway were free to carry traffic from these stations, and also from stations on the link to metre gauge railways beyond Cawnpore, in their own wagons, and to treat such traffic as their traffic.

Payment for running powers were originally agreed to be made to the Oudh and Rohilkhand Railway by the Bengal and North-Western Railway in the way of 80 per cent. of the receipts due to the link, in mileage division of the through rates with the Bengal and North-Western Railway. This payment was subsequently reduced in 1907 to 75 per cent.

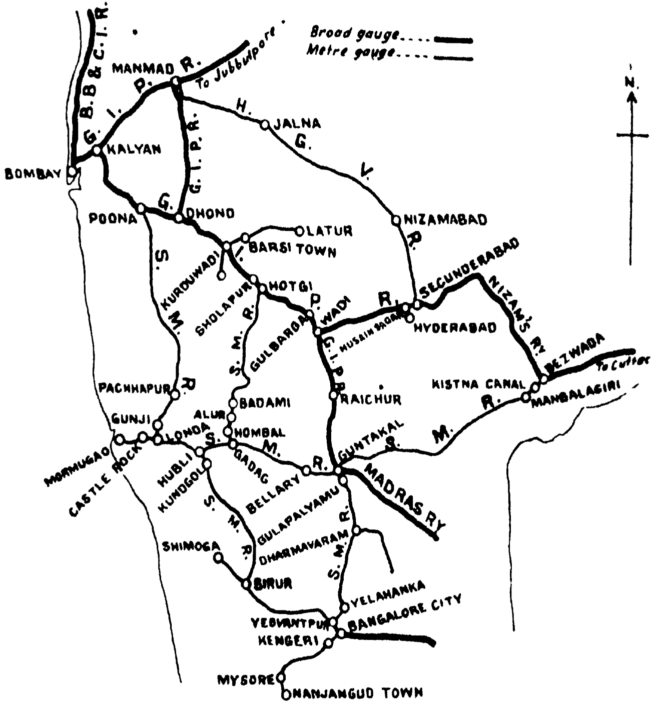
Rates after the acquisition of the G. I. P. Ry. by the State.

The Great Indian Peninsula Railway was taken over by the State in 1900, but the working of this line as well as of the Indian Midland Railway was made over to the Great Indian Peninsula Railway Company. The standard classification adopted on State Railways (which was practically the East Indian Railway Classification) was introduced on the Great Indian Peninsula Railway, as well as the same maxima and minima rates. Hitherto, the Great Indian Peninsula Railway was not bound by minima rates, and its maxima rates were higher than those of the State Railways. The only exceptions made were in the case of the cotton and piece-goods rates, which were retained at a higher figure than ⅙ pie per maund per mile A special representation was made by the Great Indian Peninsula Railway in this respect in 1902, which will be referred to later on.

Agreements between G. I. P. and N. G. S. Rys. on the opening of the H. G. V. Ry. to Manmad.

The opening of the Hyderabad-Godavari Railway from Secunderabad to Manmad necessitated consideration of the rate for cotton from Manmad to Bombay for traffic from this Railway. A glance at the sketch map below will show that the section, Manmad to Hotgi, on the Great Indian Peninsula Railway, runs parallel to the Hyderabad-Godavari Valley Railway. (The Barsi Light Railway was then only built from Barsi Road station, now known as Kurduwadi junction, to Barsi town. It had not been extended to Latur, the present north-eastern terminus of the line.)

No. 25



Before the advent of the Hyderabad-Godavari Valley Railway, a good deal of the traffic in cotton from the area lying between the Great Indian Peninsula Railway south-east line and the Hyderabad-Godavari Valley Railway, used to be carted to Barsi, Sholapur and Gulbarga on the Great Indian Peninsula Railway, and ginned and pressed there for despatch to Bombay. Pressing and ginning factories were started at the newly opened stations on the Hyderabad-Godavari Valley Railway, but the difficulty was the rate from Manmad to Bombay as compared with the rates from Barsi, Sholapur and Gulbarga (particularly from Barsi, especially as "Barsi Cotton" had a name of its own and fetched a higher price in the market). Of course in time it was hoped that cotton ginned and pressed at the newly opened stations would gain reputation, the quality being in most cases the same; but owing to the rate from Barsi to Bombay being cheaper, it enabled the merchants there to offer a better price, and helped carting of cotton to that place in preference to places on the Hyderabad-Godavari Valley Railway.

The distance from Barsi (Kurduwadi) to Bombay was 234 miles, and that from Manmad (the junction between the Great Indian Peninsula and the Hyderabad-Godavari Valley Railways) to Bombay was 162 miles; but while the rate from *viâ* Barsi was Re. 0-10-8 per maund, that from *viâ* Manmad was the ordinary rate of ·80 pie (*viz.*, Re. 0-15-8 per maund). The Nizam's Guaranteed State Railway (the Railway working the Hyderabad-Godavari Valley Railway) represented that this position affected their interests adversely. Although in respect of all other traffic, where rates were quoted on mileage basis, the Manmad junction had its advantage in the matter of rates to Bombay, owing to its shorter lead of 72 miles, as compared with the rates from Barsi (Kurudwadi), it had great disadvantage in the matter of cotton rates, and the Nizam's Guaranteed State Railway claimed similar treatment in the matter of cotton rates as in the case of class goods; but the Great Indian Peninsula Railway did not allow this position and agreed only to grant the same rate *viâ* Manmad as *viâ* Barsi (*viz.*, Re. 0-10-8 per maund).* The local rate from Maunmad to Bombay, however, continued to be Re. 0-15-8 for 162 miles against a rate of Re. 0-11-3 per maund from Kurduwadi locally to Bombay for 234 miles.

An agreement was also come to between the Nizam's Guaranteed State and Great Indian Peninsula Railways on the following points :—

(*a*) For all traffic from the Hyderabad-Godavari Valley Railway to broad gauge stations the traffic was to be carried by the shortest route, if the Nizam's Guaranteed State Railway so desired, and rates could be adjusted accordingly.

(*b*) In respect, however, of traffic from the broad gauge to the broad gauge (*viz.*, from the Nizam's Guaranteed State Railway broad gauge stations on both sides of Secunderabad to Great Indian Peninsula Railway stations on both sides of Manmad) it was accepted that although the Hyderabad-Godavari Valley Railway offered the shortest route for traffic from the Nizam's Guaranteed State Railway stations east of Secunderabad to Great Indian Peninsula Railway stations east of Manmad, such traffic should continue to be routed by the broad gauge route *viâ* Wadi, the object principally being to avoid the double transhipment.

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* Lately, however, the Great Indian Peninsula Railway made their rate *viâ* Manmad cheaper than from Barsi and from *viâ* Kurduwadi.

It may be noted here that the Madras Railway, in their shortest route agreement with the South Indian Railway previously referred to and the Great Indian Peninsula Railway, in the agreement, just mentioned, with the Nizam's Guaranteed State Railway, seemed to hold the view that where double break of gauge was avoided, the unbroken gauge route, even if it be longer, should carry the traffic; but it will be noticed later on that in the case of traffic from the East Coast Railway stations, in the vicinity of Bezwada, to Great Indian Peninsula Railway stations, the Madras and Southern Mahratta Railway claim the traffic, at equal rates *viâ* Bezwada and Hotgi and *viâ* Bezwada, Guntakul and Raichur, to those in force *viâ* Bezwada and Wadi, although the former two routes are longer and involve double breaks of gauge whereas the Wadi route in addition to being shorter, is an unbroken broad gauge route. The main grounds of the Madras and Southern Mahratta Railway claim appear to be that, as the Southern Mahratta Railway and the Madras Railway have been amalgamated, and since the East Coast Railway also forms part of the Madras Railway system, they have the right to carry the traffic by the route that gives them the longest lead, although such a course might involve two transhipments. It is not clear whether such a contingency was contemplated when the amalgamations were arranged. This question will, however, be discussed in detail in connection with an agreement that was come to between the Great Indian Peninsula, Nizam's Guaranteed State and Madras and Southern Mahratta Railways in 1911.

The amalgamation of the Indian Midland and the Great Indian Peninsula Railways in 1900 led to adjustments of rates on the part of the new Great Indian Peninsula Railway system in order to attract traffic to the Bombay port and to the routes which gave the Great Indian Peninsula and Indian Midland Railways, as a combined system, the longest lead.

Competition between G. I. P. and E. I. Rys. for traffic to Bombay from the U. P. carried viâ Jubbulpur, previous to amalgamation of G. I. P. and I. M. Rys.

There was large traffic in grain and seeds from East Indian Railway stations on their main line, Fatehpur to Bharwari, which portion of their line runs parallel to some of the stations on the Jhansi-Manikpur branch of the Great Indian Peninsula Railway. The important stations on the East Indian Railway were Khaga and Sirathu, while the corresponding stations on the Great Indian Peninsula Railway were Bahilpurwa, Chittrakot, and Atarra. The river Jumna runs between these two lines. At one time, owing to the rates from the Indian Midland Railway stations on the Jhansi-Manikpur branch to Bombay being high, traffic used to be attracted south of the Jumna to stations on the East Indian Railway and booked to Calcutta or sent to Bombay *viâ* Jubbulpore. There was also traffic from the East Indian Railway stations on their Jubbulpore line to Bombay, which was particularly heavy from places like Sutna and Maihar. Such traffic always followed the Jubbulpore route as it was the shortest, but this had the effect of making the rates to Bombay higher than what it would be if the traffic was given up by the East Indian Railway to the Great Indian Peninsula Railway at the nearest junctions, *viz.* at Manikpur or at Katni.

The Great Indian Peninsula Railway, a year after the amalgamation, started taking measures by low rates to secure the traffic to the routes that gave them the longest lead and cheapest rates to their port of Bombay. Therefore, while minimum rates were quoted by this Railway from Manikpur and Katni to Bombay, higher mileage rates were in force *viâ* Jubbulpore. Low rates were also quoted from stations on the Jhansi-Manikpur branch to Bombay.

The rates quoted for grain by the Great Indian Peninsula Railway were as follows from the undermentioned junctions:—

	Miles.	Rate per maund. Rs.	A.	P.	Pie per maund per mile.
From Jubbulpore and *viâ* to Bombay	616	0	6	0	= ·116
From Katni and *viâ* to Bombay	771	0	6	5	= ·10
From Manikpur and *viâ* to Bombay	883	0	7	4	= ·10

Reductions were also made in the rates for piece goods, sugar, kerosine oil, salt, iron and other goods, in which there was traffic to and from the ports to and from the East Indian Railway stations and stations adjacent to Katni and Manikpur on the Great Indian Peninsula Railway. The result was that the Great Indian Peninsula Railway Jhansi-Manikpur branch retained the traffic originating south of the Jumna, and the traffic from Sutna, Sirathu, Khaga, Maihar, etc., to Bombay began finding its way *viâ* Katni or *viâ* Manikpur instead of *viâ* Jubbulpore, the shortest route. The object aimed at by the Great Indian Peninsula Railway was not so much to get a long lead on East Indian Railway traffic as to get the rates for Bombay lowered in competition with Calcutta. If the traffic went *viâ* the shortest route *viâ* Jubbulpore, it meant that the East Indian Railway would control the traffic over a longer lead than if the traffic went *viâ* Manikpur or *viâ* Katni; and, further, as it was to the interests of the East Indian Railway to draw such traffic to Calcutta and the Bombay traffic did not get low rates over the East Indian Railway, so it was thought best by the Great Indian Peninsula Railway to compete for the traffic for Bombay by quoting the lowest rates from the nearest junctions in order to reduce the effect of "' blocking rates" over the East Indian Railway. It will be useful to illustrate the position by an example.

	Miles.
Sutna to Katni—East Indian Railway	61
Katni to Bombay—*viâ* Indian Midland Railway and Great Indian Peninsula Railway	771
	832

Sutna to Jubbulpore	118
Jubbulpore to Bombay	616
	734

The Jubbulpore route is 100 miles shorter, but the Great Indian Peninsula Railway can obtain the cheapest rate to Bombay by the Katni route.

	Pies
East Indian Railway (maximum rate at ⅓rd pie plus 9 pies terminal) from Sutna to Katni	29
Great Indian Peninsula Railway (minimum rate from Katni to Bombay)	77
	106

But *viâ* Jubbulpore the East Indian Railway rate would be, at their scale, 35 pies (if they did not levy the special terminals *viâ* that junction), which, combined with the rate of Re. 0-6-0 from Jubbulpore to Bombay over the Great Indian Peninsula Railway, made the through route to Bombay 107 pies. So that if the East Indian Railway wanted to retain the traffic to the Jubbulpore route they could neither charge the high terminal nor the maximum rate of 45 pies* from say Sutna to Jubbulpore. They would have to apply their scale rates and even go below. The Great Indian Peninsula Railway object was to obtain cheap rates to Bombay, and this they gained in the agreement that was come to in 1903.

While the grain rates were lowered down to their minimum, the rates for other commodities were yet maintained at higher figures than the minimum ; but if the competition continued the rates would have come down. The competition did continue for more than a year. The disturbance of rates was great. For instance, it became possible for traffic from Calcutta to Cawnpore to be booked to Manikpur in the first instance and then rebooked from there, because the Calcutta-Manikpur rate had been reduced in competition with the Bombay to Manikpur rate. Similarly, in the case of piece goods and sugar it became possible for traffic to be booked from Calcutta to Katni and then rebooked from Katni to Nagpur, for it was cheaper to book traffic in this manner than to book direct from Calcutta to Nagpur, in consequence of low rates being in operation between Calcutta and Katni, in response to the competitive quotations between Bombay and Katni.

Agreement between the G. I. P. R. and the S. M. R.

The agreement concluded between the London Boards of the Great Indian Peninsula, Southern Mahratta and West of India Portuguese Railways in 1899 was not considered suitable by the Southern Mahratta Railway Company, and they gave notice of its cancellation after the experimental stage of one year was over, and the competition that followed was even more serious than that after the cancellation of the 1896 agreement. Changes in rates were frequent, and it was argued by the Great Indian Peninsula Railway that if the West of India Portuguese Railway Company and the Steamer Company, not being parties to the Indian Railway Conference Association, could vary their rates at any time, the Great Indian Peninsula Railway could also do the same in response to any quotations of these Companies. The result was that the merchants got tired of this position and the competition between Railways resulted in competition between merchants. The Bhayndar Salt merchants were placed at a disadvantage for Bhayndar, though close to Bombay, was a station on the Bombay, Baroda and Central India Railway. While the rates for salt from Bombay, Dadar and other Great Indian Peninsula stations between Bombay and Kalyan were reduced on short notice, the Bhayndar rates would remain high for the time being as the reduction *viâ* Dadar junction with the Bombay, Baroda and Central India Railway could only be made under notice required by Conference rules.

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* 118 miles × ⅓rd pie = 39 pies + 6 pies terminal = 45 pies

The competition was carried to extremes in the matters of rates all round, but the several routes came to discover which traffic they could command, and the railways also began to realise that the reduction in rates between the competitive points was affecting non-competitive areas as well, and, therefore, at a meeting held at Poona between the General Traffic Managers of the Great Indian Peninsula and Southern Mahratta Railways in November 1901, a reasonable compromise was made and a territorial division of traffic was effected as follows :—

1. Certain stations on the Southern Mahratta Railway were allotted to the rail and certain stations to the sea routes. A difference in rates of 12 pies per maund in special class, 18 pies per maund in first class and 24 pies per maund in other classes in favour of the sea route was maintained when that was the allotted route, and *vice versâ*.

2. The Southern Mahratta Railway stations were divided according to the following allotment and the division and routing agreed to was as follows :—

All rail route—(1) viâ Poona.

(a) Traffic between stations on the Poona branch of the Southern Mahratta Railway, Poona to Dhupdhal inclusive, and Bombay.

(b) Traffic between stations on the Southern Mahratta Railway, Kengeri to Nanjangud both inclusive, and Bombay.

(2) Viâ Hotgi.

(a) Traffic between Bombay and stations on the Southern Mahratta Railway, Hotgi to Badami inclusive.

(b) Traffic between Bombay and the Kistna Canal Siding (Bezwada).

Sea Route.

Traffic between Bombay stations and Southern Mahratta Railway stations on the sections noted below :—

(a) Pachhapur to Gunji (inclusive) on the Poona branch.

(b) Portuguese Frontier to Mangalagiri on the main line.

(c) Kundgol southwards to Yesvantpur, including Shimoga branch.

(d) Alur to Hombal (both inclusive) on the Hotgi section.

(e) Gulapalamu to Yelahanka inclusive on the chord line.

3. The Great Indian Peninsula Railway agreed to abstain from competing for traffic to and from the Southern Mahratta Railway stations by way of the Guntakal-Raichur route, and also to abstain from competing for traffic to and from Southern Mahratta Railway stations on the Bellary-Kistna Railway *viâ* Wadi, which had been allotted to the sea route.

Junction Traffic.

4. Bangalore (City and Cantonment)—All traffic excluding salt, which is dealt with hereafter, between the following Bombay stations, namely, Wadi Bandar, Victoria Terminus, Colaba and Dadar, and Bangalore (City and Cantonment) was divided between the following routes in the proportions noted below. The division was to be on freight value representing the through freight between Bombay and Bangalore—

Viâ Mormagao	One-fourth.
Viâ Guntakal and Raichur	One-fourth.
Viâ Poona	One-half.

All goods traffic, excluding salt, between Guntakal and Bombay (Wadi Bandar, Victoria Terminus, Colaba, Dadar *viâ* Dadar, and Konkan stations) was divided by the routes shown below on the same principle in the following proportions, namely :—

Viâ Raichur	One-half.
Viâ Hotgi	One-half.

The traffic between Bezwada and Bombay (Wadi Bandar, Victoria Terminus, Colaba, Dadar *viâ* Dadar, and Konkan stations) was divided on the same principle in the following proportions :—

Viâ Wadi	One-half.
Viâ Hotgi	One-half.

The Dharamavaram Junction traffic was allotted to the *viâ* Mormagao route with the fixed margin of difference in rates in favour of the sea route.

Salt Traffic.

5. Salt traffic from all Konkan stations of the Great Indian Peninsula Railway, including Bombay and *viâ* Dadar, to all stations on the Southern Mahratta Railway, including the junction stations, Bangalore (City and Cantonment), Dharmavaram and Guntakal, but not including traffic *viâ* the junctions, was *allotted to the all rail routes* viâ *Poona and* viâ *Hotgi*, the other routes not being recognized for this particular traffic.

The rates between the Great Indian Peninsula and the Southern Mahratta Railways for salt traffic was applied by the shortest route, as between *viâ* Poona or *viâ* Hotgi, as the case may be, and was divided in mileage proportion, subject only to the one proviso that the Southern Mahratta Railway would be allowed 3 pies per maund as a short distance charge when their lead did not exceed 75 miles.

All other rates were also to be divided on mileage, and scales were to apply on the through distance over the Great Indian Peninsula and Southern Mahratta Railways; the Southern Mahratta Railway were to be allowed a terminal of 3 pies per maund when their lead was less than 75 miles.

These arrangements apply even to the present day.

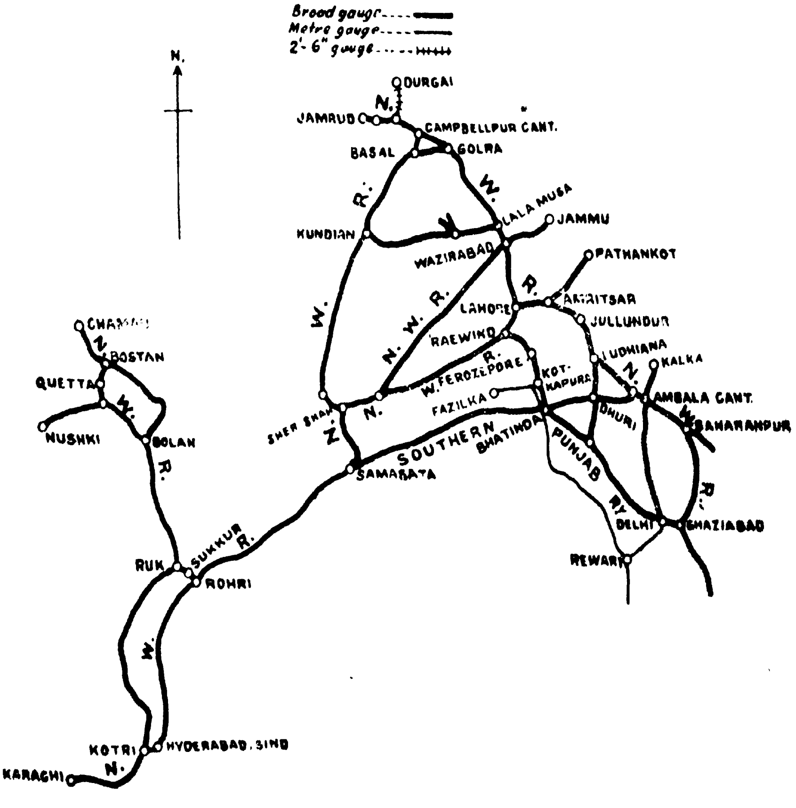
Running powers between Bhatinda and Ferozepore, by the N. W. Railway.

The opening of the broad gauge line between Bhatinda and Ferozepore Cantonment necessitated an agreement between the Bombay, Baroda and Central India Railway, the owners of this broad gauge link, and the North Western Railway to allow of the latter running its trains over the broad gauge line between Bhatinda and Ferozepore. The following were the clauses relating to rates and fares and payment for running powers in the agreement which was come to in 1901:—

"All the traffic carried in North Western Railway trains between Bhatinda and Ferozepore Cantonment, and consigned to or from or *viâ* its system and connected railways, from or to or *viâ* any station on the broad gauge line and connected railways, shall be considered Bombay, Baroda and Central India (Rajputana-Malwa) Railway traffic, and accounted for as such in the usual manner."

"The classification of goods, and rates and fares to be charged for traffic carried in North Western Railway trains over the Ferozepore-Bhatinda section (1) in local booking between stations on the broad gauge line, (2) in through booking between such stations and stations on the North Western Railway reached *viâ* Ferozepore Cantonment or *viâ* Bhatinda, and (3) in through booking between *viâ* Ferozepore Cantonment and *viâ* Bhatinda (*i.e.*, cross traffic), shall be the same as in force on the Bombay, Baroda and Central India (Rajputana-Malwa) Railway. As a remuneration for such services, the Bombay, Baroda and Central India (Rajputana-Malwa) Railway shall pay to the North Western Railway 20 per cent. of the gross traffic earnings on the traffic carried in the North Western Railway trains running between Ferozepore Cantonment and Bhatinda."

No. 26



A dispute arose between the North Western Railway and the Southern Punjab Railway as regards apportionment of through rates and as to the rights of the Southern Punjab Railway for freight on cross traffic. The points of dispute were set forth in the schedules to the memorandum

Dispute between S. P. and N. W. Rys.

of the appointment of an arbitrator. The schedules are reproduced below :—

Schedule to the Memorandum of appointment, dated 28th June 1900.

The First Part.

Claims of the Company.	Refusal by the Secretary of State.	Matters in difference.
1. That the Company are entitled to have credited in account with the Secretary of State as part of the gross earnings of the Company's Railway, under the said indenture of 13th August 1895, its mileage proportion of the rates on all traffic interchanged between the North Western State Railway system for the time being (including the Company's Railway and the Patiala State Railway) and foreign lines, wherever the Company's Railway forms part of the shortest route for such traffic, on the assumption that the same has gone by such shortest route by whichever route the same may in fact be sent. 2. That the Company are entitled to have credited in account with the Secretary of State as part of the year's earnings, of the Company's Railway, under the said Indenture, freight on maintenance and revenue stores for use on sections of the North Western State Railway system other than the Company's railway, where such stores pass or might pass over the Company's railways in circumstances,' which, under Clauses 1 and 18 of the said Indenture, would entitle the Company to credit in respect to ordinary traffic. 3. That the Company having by direction of the Government of India paid to the Bombay, Baroda and Central India Railway Com-	The Secretary of State's letter of 13th July 1899 stated that the Contract to be construed related to the construction of the Southern Punjab Railway and to its working and management, in conjunction with the North Western Railway and that the shortest route contemplated is the shortest route from any point to any other point by the lines of the associated railways, not any route made up in part of a foreign line, over which the associated railways have no control as to rates and fares in through booking, and in particular refused to admit the Company's claim in respect of— (*a*) "Traffic to stations north of Raewind which is booked for interchange with the East Indian Railway at Ghaziabad, and with the Bombay, Baroda and Central India Railway at Delhi, as the shortest route from Delhi, at Ghaziabad to such stations involved the use of the metre gauge section of the Bombay, Baroda and Central India Railway between Bhatinda and Ferozepore; and further declared that (*b*) "The 'shortest route' rule applies only in the case of goods received by interchange from the point at which they were so received and that no responsibility attaches to the North Western Rail-	Whether the Company were and are entitled to have credited in account with the Secretary of State as part of the gross earnings of the Company's railway, under the said Indenture of 13th August 1895, its mileage proportion of the rates on all traffic interchanged between the North Western State Railway system for the time being (including the Company's Railway and the Patiala State Railway) and foreign lines wherever the Company's Railway forms part of the shortest route between the point of despatch and the point of destination for such traffic, on the assumption that the same has gone by such shortest route by whichever route the same may in fact be sent in all cases, and whether such shortest route is or is not made up in part of a foreign line and in particular— (*a*) Where a metre gauge railway is part of the shortest route; and (*b*) When the consignor or a foreign railway decides the point of interchange at a point other than the point of interchange on the shortest route. Whether the Company are entitled to have credited in account with the Secretary of

Schedule to the Memorandum of appointment, dated 28th June 1900—continued.

Claims of the Company.	Refusal by the Secretary of State.	Matters in difference.
pany for the construction of their authorised line, a distance of ·79 of a mile to the station of the North Western Railway at Delhi, and the completion of such line having been prevented by the Government of India in breach of the provisions of the said Indenture, the Company are entitled to credit for the full mileage of their authorised line, and the Secretary of State is not entitled under the said Indenture to deduct from the gross earnings of the Company's railway the Company's earnings as for two miles in respect of the use of a ·79 of a mile of another Company's line used in conveying the traffic from the Company's line into or from the said station.	way if the consignor or a foreign railway decides the point of interchange in a manner disadvantageous to the interests of the Southern Punjab Company." The Secretary of State by letter of 13th July 1899, concurred with the Government of India in the interpretation placed by them upon the Southern Punjab Railway Company's contract, *viz.*, "that nothing in respect of such stores comes within the definition of gross earnings in clause I, nor is there any other clause which can support the Company's contention." The Government of India on the 9th December 1899, informed the Company that the Secretary of State had confirmed their decision that a deduction as for two miles should be made.	State as part of the gross earnings of the Company's railway under the said Indenture, freight on maintenance and revenue stores for use on sections of the North Western State Railway system other than the Company's railway, where such stores pass or might pass over the Company's railway in circumstances which, under clauses 1 and 18 of the said Indenture, would entitle the Company to credit in respect to ordinary traffic. Whether the Company are entitled to credit for the full mileage of their authorised line into the station of the North Western Railway at Delhi or whether the Secretary of State is entitled to make any and what deduction in respect of the use of another Company's line in conveying the traffic from or to the Company's line into or from the said station.

THE SECOND PART.

The Decision of the Government of India on behalf of the Secretary of State.	Matter in difference.
The Government of India in a letter, dated 15th September 1899, to the Manager of the North Western Railway, said :— "In connection with the approaching revision of the existing Agreement with the Bombay, Baroda and Central India Railway Company for working the Rajputana-Malwa Railway system, right has been reserved for the resumption by the State of the Bhatinda-Ferozepore section or any part thereof at any time between the 30th June 1900, and 31st December 1904. Meanwhile, however, the Bhatinda-Ferozepore line should from the date of its opening on the standard gauge be treated as forming an integral part of the North Western State Railway for the purposes of the Southern Punjab Railway Contract."	Whether the Secretary of State is entitled, under the said Indenture, of 13th August 1895, to treat the Bhatinda-Ferozepore section of the Rajputana-Malwa system from the date of its opening on the standard gauge, or at all, as part of the North Western State Railway for the purposes of that indenture.

The award of Mr. Cripps, K.C., of 1, Essex Court, Temple, given in March 1901 on the points in dispute is noted below :—

" As to the first matter in difference set out in the first part of the said schedule, I award and adjudge that the Company were and are entitled to have credited in account with the Secretary of State as part of the gross earnings of the Company's Railway, under the Indenture of 13th August 1895, a mileage proportion of the share of the rates received by the North Western State Railway System for the time being (including the Company's Railway and the Patiala State Railway) on all traffic interchanged between the said North Western State Railway system for the time being (including the Company's Railway and the Patiala State Railway) and foreign lines, wherever the Company's railway forms part of the shortest route between the point of despatch and the point of destination of such traffic, on the assumption that the same has gone by such shortest route by whichever route the same may in fact be sent in all cases, and whether such shortest route is or is not made up in part of a foreign line and in particular —

" A. Where a metre gauge railway is part of the shortest route ; and

" B. When the consignor or a foreign railway decides the point of interchange at a point other than the point of interchange on the shortest route."

" Such mileage proportion to be calculated on the respective distances for which the traffic has been carried, or would have been carried, if sent by such shortest route over the Company's Railway and the rest of the North Western State Railway system for the time being."

" As to the second matter in difference set out in the first part of the said schedule, I award and adjudge that the Company are not entitled to have credited in account with the Secretary of State, as part of the gross earnings of the Company's Railway, under the said Indenture, freight on maintenance and revenue stores for use on sections of the North Western State Railway system other than the Company's Railway, where such stores pass or might pass over the Company's Railway in circumstances which under clauses 1 and 18 of the indenture would entitle the Company to credit in respect of ordinary traffic."

" As to the third matter in difference set out in the first part of the said schedule, I award and adjudge that the Company are entitled to credit for the full mileage of their authorised line into the station of the North Western Railway at Delhi, and that the Secretary of State is not entitled to make any deduction in respect of the use of another Company's line in conveying the traffic from or to the Company's line into or from the said station."

" As to the matter in difference set out in the second part of the said schedule, I award and adjudge that it was within the competence of the Government of India to issue the letter, dated 15th September 1899, and that the Secretary of State is entitled to treat the Bhatinda-Ferozepore section of the Rajputana-Malwa system, from the date of its opening on the standard gauge, as part of the North Western Railway for the purposes of the said Indenture of 13th August 1895."

Reduction in coal rates.

The East Indian Railway with a view to the development of the coal industry in India introduced the following reduced rate for coal at owner's risk in full wagon loads subject to a minimum charge of 1/10th pie per maund per mile on through distance, and this scale was adopted simultaneously by the Eastern Bengal, Bengal Nagpur, Oudh and Rohilkhand and North Western Railways.

	Per maund per mile.
For all distances up to 75 miles inclusive	0·14
Plus for any distance in excess of 75 miles and up to 200 miles, inclusive	0·12
Plus for any distance in excess of 200 miles and up to 450 miles, inclusive	0·10
Plus for any distance in excess of 450 miles and up to 1,000 miles, inclusive	0·09

Sanction for construction of lines in the coal field.

In the same year, in accordance with the recommendation of the committee which in 1900 investigated the question of the entry of the Bengal Nagpur Railway into the Jherria Coal Field, and of the provision of an independent access into Calcutta from the United Provinces of Agra and Oudh, the following lines were sanctioned for construction :—

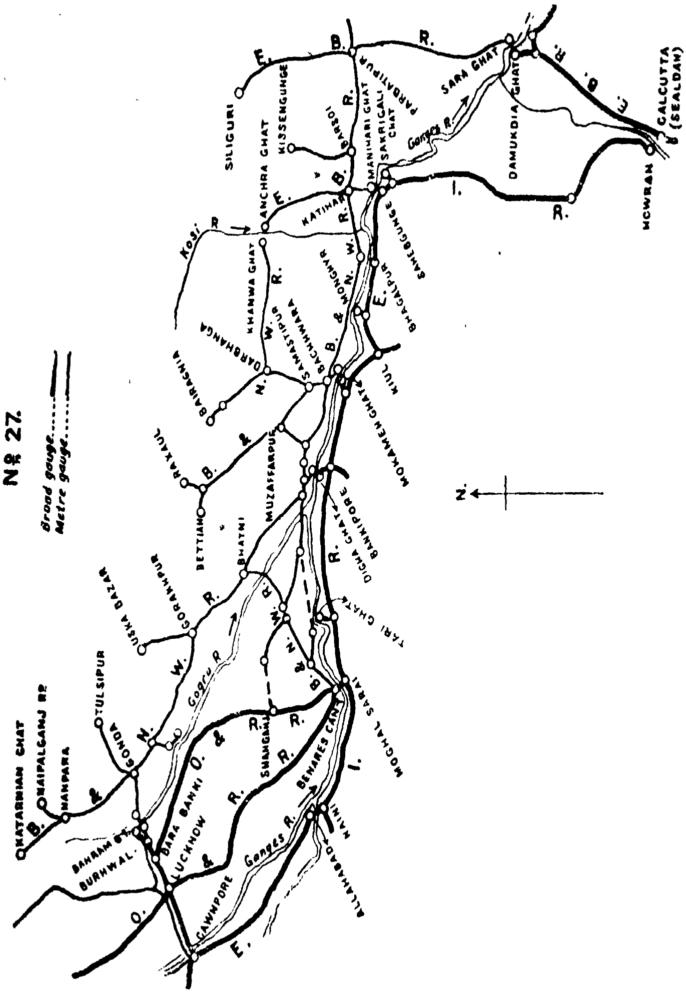
(*a*) by the East Indian Railway Company—
  Manpur (Gya) to Hariharpur.
  Katrasgarh to Khanoodih.
  Jherria to Dhanbaid.
  Northern half of the Mulkera-Katrasgarh cross connection, and
  Tasra siding ; and
(*b*) by the Bengal Nagpur Railway Company—
  Bhojudih to Hariharpur.
  Bhojudih to Pathardihi.
  Bhojudih to Mohuda.
  Bhaga connection.
  Southern half of the Mulkera-Katrasgarh cross connection, and
  Bhowra siding.

Connection between the E. B. S. and B. and N.-W. Rys. at Katihar junction.

The Kosi bridge near Katihar on the Tirhoot section of the Bengal and North-Western Railway was completed in July 1902, and the permanent bridge over the river Gogra at Turtipur was also opened for traffic in the same year. The Bengal and North-Western Railway were now able to run their trains through from Cawnpore to Katihar. The Agent of the Bengal and North-Western Railway took up the question of a reasonable agreement with the East Indian Railway in respect of traffic between the points of junction with the two lines and the districts to the west and north to which both railways had access either over their own system throughout or in conjunction with another line.

The Bengal and North-Western Railway runs from Katihar to Benares on the north bank of the Ganges parallel to the East Indian Railway on the south bank thereof from Sahebganj to Moghalserai, and on this length the two railways form junctions at Bhagalpur, Monghyr, Mokamehghat, Digha Ghat and Tarighat. The Bengal and North-Western Railway had by then access to Cawnpore over the metre gauge link of the Oudh and Rohilkhand Railway, and therefore, they were also in competition with the East Indian Railway for traffic from the Eastern Bengal Railway and from their own line, and also from junction stations named above to Cawnpore and west thereof. The claim of the Bengal and North-Western Railway to traffic from their own line to Cawnpore and west thereof was recognised. As a matter of fact, this traffic was already being routed *viâ* the Bengal and North-Western Railway and the Oudh and Rohilkhand Railway link. The East Indian Railway, however, so adjusted its rates from its own stations south of the Ganges for its local traffic, and for traffic to stations on foreign railways beyond Cawnpore, as to retain all traffic originating south of the Ganges to their own route. The statement on next page shows the distances between junctions of the Bengal and North-Western Railway and the East Indian Railway.

From Junction.	To Bhagalpur.	To Monghyr.	To Mokameh Ghat.	To Digha Ghat.	To Tari Ghat.	To Moghalsarai.	To Benares City.	To Benares Cantonment.	To Daliganj.	To Lucknow Junction.	To Cawnpore	To Collectorganj.	To Anwarganj.	To Hathras Road.	To Hathras City.	To Aligarh.	To Delhi.	To Ghaziabad.	To Saharanpur.	To Umballa.	—
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Katihar .	55	88	115	174	276	335	323	325	478	478	525	527	526	..	720	729	779	767	800	851	**Katihar**
	68	104	147	210	312	336	343	346	537	533	551	554	..	724	729	743	821	809	907	944	
Sakrigali Ghat .	51	87	130	193	295	319	326	329	520	516	534	537	..	707	712	726	804	792	890	927	**Sakrigali Ghat.**
Bhagalpur .	..	53	80	139	241	300	288	290	443	443	490	492	491	..	685	694	744	732	765	816	**Bhagalpur.**
	..	36	79	143	244	268	275	278	469	485	483	486	..	656	661	675	753	741	839	878	
Monghyr .	..	..	35	94	196	255	243	245	398	398	445	447	446	..	640	649	699	687	720	771	**Monghyr.**
	..	..	51	115	216	240	247	250	441	437	455	458	..	628	633	647	725	713	811	848	
Mokameh Ghat .	..	..	..	69	171	230	218	220	373	373	420	422	421	..	615	624	674	662	695	746	**Mokameh Ghat.**
	..	..	..	64	165	189	196	199	390	386	404	407	..	577	582	596	674	662	760	797	
Digha Ghat .	..	..	..	..	108	167	155	157	310	310	357	359	358	..	552	561	611	599	632	683	**Digha Ghat.**
	..	..	..	..	113	137	144	147	338	334	352	355	..	525	530	544	622	610	708	745	



After a great deal of discussion the following was agreed to in June 1902:—

I. For traffic between the Bengal and North-Western Railway proper and Cawnpore and above, the routing was to be as follows:—

(*a*) Cawnpore, including mill sidings, by the Bengal and North-Western Railway and Oudh and Rohilkhand Railway route.

(*b*) Section Panki to Pali (excluding Agra and Hathras City), *viâ* Cawnpore, as in (*a*).

(*c*) Aligarh, by the Bengal and North-Western Railway and Oudh and Rohilkhand Railway route.

(*d*) Section Kalwa to Dadri, *viâ* Aligarh.

(*e*) Ghaziabad, by the Bengal and North-Western Railway and Oudh and Rohilkhand Railway route.

(*f*) Delhi Shahdara, *viâ* Ghaziabad.

(*g*) Delhi, by the Bengal and North-Western and Oudh and Rohilkhand Railway routes.

(*h*) Section Badli to Kharindwa, *viâ* Ghaziabad, as in (*e*).

(*i*) Amballa, by the Bengal and North-Western Railway and Oudh and Rohilkhand Railway *viâ* Saharanpur.

Revised agreement between E. I. and the B. and N.-W. Railways.

II. For traffic from the Eastern Bengal State Railway to Cawnpore and above, and *vice versâ*:—

(1) traffic to or from purely East Indian Railway stations was agreed to be routed and rated *viâ* Manihari.

(2) for traffic to and *viâ* junctions, *viz.*, Cawnpore, Aligarh, Ghaziabad, Delhi and Amballa, the rate was to be equal by the East Indian Railway *viâ* Manihari and the Bengal and North-Western Railway *viâ* Barabanki.

(3) For traffic to and from Bengal and North-Western Railway to Oudh and Rohilkhand Railway stations, rates were to be in favour of the Bengal and North-Western Railway route *viâ* Barabanki and *viâ* Katihar.

III. For traffic between Bengal and North-Western Railway stations proper and East Indian Railway stations, Sakrigali to Chakeri, including Jubbulpore line:—

The sending line was to retain the traffic up to the junction giving it the longest possible lead, provided that the traffic was not thereby carried beyond the point of delivery, *e.g.*, traffic from Gorakhpur for Barh may not be routed *viâ* Mokameh but must be routed *viâ* Digha. The receiving line would charge full tariff rates from the junction to destination, provided the proportion of the despatching railway be not unduly lowered.

For traffic to and from Benares and *viâ* to and from stations on the Bengal and North-Western Railway, the East Indian Railway would not compete *viâ* Moghalserai, *e.g.*, the traffic from Jaunpore to Mozafferpore should be carried by the Oudh and Rohilkhand Railway and the Bengal and North-Western Railway combined route *viâ* Benares cantonment and must not be competed for by the East Indian Railway *viâ* Moghalserai and Digha Ghat.

IV. Traffic between Eastern Bengal Railway and the East Indian Railway stations from Sakri to Chakeri, including the Bengal and North-Western Railway junctions with the East Indian Railway, was to be interchanged at Manihari, and not through the Bengal and North-Western Railway, and the rates to be adjusted accordingly.

V. All traffic from the Bengal and North-Western Railway stations west of Mokameh to Calcutta was to be routed *viâ* Mokameh. The apportionment of special through rates between the Bengal and North-Western Railway stations and Howrah, in respect of stations for which special through rates were quoted prior to 1902, would continue to be adjusted on the following basis :—

"For the Bengal and North-Western Railway stations proper, where the Bengal and North-Western Railway lead calculated *viâ* Digha Ghat is 100 miles or less, 50 per cent. shall be added to the Bengal and North-Western Railway mileage before division.

Where the Bengal and North-Western Railway lead *viâ* Digha Ghat is over 100 miles and less than 150 miles, 25 per cent. shall be added to the Bengal and North-Western Railway mileage before division. Where the Bengal and North-Western Railway lead *viâ* Digha Ghat is 150 miles or over, 10 per cent. shall be added to the Bengal and North-Western Railway mileage before division."

It was further agreed that 6 pies crossing charge should be deducted from the through rate, and that the balance should be apportioned in mileage between the East Indian and Bengal and North-Western Railways, and that the mileage proportion of the East Indian Railway rate from Digha Ghat to Howrah, should be applied on mileage from Mokameh Ghat to Howrah, the balance being given to the Bengal and North-Western Railway, *plus* the crossing charge.

But no additional percentage of distance to the Bengal and North-Western Railway was to be added in respect of stations for which special rates were not arranged for before 1902.

VI. Traffic from Calcutta for Bengal and North-Western Railway stations west of Mokameh was to be also made over to the Bengal and North-Western Railway at Mokameh.

VII. Actual distance over the East Indian Railway *viâ* Mokameh to Howrah and *vice versâ* to be charged for.

Running powers by the G. I. P. Ry. over the O. and R. Ry. from Cawnpore to Lucknow.

In June 1902, as a result of the amalgamation of the Great Indian Peninsula and Indian Midland Railways, the new Great Indian Peninsula Railway Company applied for running powers from their north-eastern terminus of Cawnpore to Lucknow over the Oudh and Rohilkhand Railway, and this was allowed in respect of passenger trains of the Great Indian Peninsula Railway.

Special classification for cotton on the G. I. P. Ry.

As already stated, the Great Indian Peninsula Railway adopted in 1901 the Government standard classification for all goods traffic except cotton and piece goods. The Government called for a report on the reasons which necessitated a higher classification for cotton on the Great Indian Peninsula Railway than on any other line. The following points were put forward in defence of the higher classification (·80 pie per maund per mile for cotton on the Great Indian Peninsula Railway)—

"(*a*) The rates have been in force for many years without demur from the trade.

"(*b*) The maximum rate is only applied at points where the traffic can bear it.

"(*c*) The reduced Railway freights will not extend the area under cultivation.

"(*d*) The trade does not ask for any reduction and that the general consensus of opinion among those doing business in cotton is that reduced freights will not increase business.

"(*e*) The large capital on which interest has to be earned and the heavy working expenses on this railway owing to steep gradients, the Ghauts, and the nature of the country traversed.

"The second class rate for full-pressed, and the other classes for loose, cotton in force on State railways had been adopted from the East Indian Railway classification. The East Indian Railway were for years in competition with river transportation, and the highest rate which cotton could bear was second class, and that if they had attempted to charge a higher rate the traffic would have been carried by other transport. The Great Indian Peninsula Railway have had similar difficulties to contend with at several localities which have been met by suitable reductions and in some cases such reductions have been much below second class; further, the cotton traffic on the East Indian Railway was a small item, hardly affecting their receipts; whereas with the Great Indian Peninsula it was one of the main staples of traffic. The area under cotton cultivation in the season 1900-01 showed an increase of 15 per cent. over 1899-1900, of 12 per cent. over the average of the preceding five years, and of 9 per cent. over the average of the preceding ten years. These figures showed that the total area under cotton cultivation was steadily increasing under the high rates."

The Great Indian Peninsula Railway also argued as follows:—

"Most cotton transactions are 'forward sales,' and to illustrate what these fluctuations may mean, the following example may be given. A firm, say on the 15th January 1900, instruct their agents to buy cotton in Jalgaon when the price of Khandesh cotton was Rs. 21-3-9 per maund in Bombay. By the 9th February, the cotton delivery date in Bombay, the price had risen to Rs. 23-3-6 per maund, a difference of Re. 1-15-9 in favour of the buyer. The present Railway freight Jalgaon to Bombay is Re. 0-14-6 per maund. If the contemplated reduction is adopted it will be Re. 0-11-9 per maund, a difference of Re. 0-2-9 per maund would be lost to the Railway without affecting the movement of the traffic one way or the other, for when the purchase was made the gain of Re. 1-15-9 in favour of the buyer was an unknown quantity; whilst the price of the Khandesh cotton, on the 4th of April 1901 was Rs. 16-3-4, by the 27th September 1901 it had risen to Rs. 18-6-6 per maund, a difference of Rs. 2-3-2. Surely it may reasonably be assumed that under such conditions a reduction of Re. 0-2-9 per maund can have no effect on the production or movement of cotton. The same remarks apply to cotton for other localities."

"The estimated loss on piece-goods traffic for a year amounts to Rs. 1,78,647. Piece-goods is a commodity for which the demand is much affected by the state of the seasons. If one takes into account the high price of a commodity like piece-goods, one does not consider the rate to be excessive. In the report of the Director of Land Records, etc., for the period under notice, the price per maund of twist and yarn of the lowest quality manufactured in India, is quoted at Rs. 29 and for European twist and yarn Rs. 61. Of course manufactured piece-goods have a much higher value, and seeing that the reduction that the Great Indian Peninsula are called to make in some cases averages from two to four annas per maund, it seems obvious that it cannot affect the movement of the traffic one way or the other, and that being so, it seems to us a useless sacrifice of revenue to reduce the rates. Another point to be borne in mind is the different nature of the country through which the two lines pass. The East Indian Railway passes through a fertile country for practically the whole of its length, and reaches many towns and cities having a very large population. As compared with this, the Great Indian Peninsula line has very few towns or cities equal in importance to those on the East Indian Railway, whilst for the last 200 or 300 miles before reaching Bombay the country through which the Great Indian Peninsula Railway passes is of little importance commercially. Again on account of the easy gradients, etc., the working and maintenance on the East Indian Railway generally is of a much less costly nature than that on the Great Indian Peninsula on which not only heavy gradients rule, but on the North-east and South-east lines the Ghauts necessitate special working arrangements which are very costly compared with ordinary working."

The higher classification for both cotton and piece-goods was allowed.

Powers of the Madras Ry. to reduce rates.

An important question arose in connection with the lowest rates the Madras Railway could charge. There was no minimum fixed for this line and when the Government of India resolution No. 1146-R.T., dated 12th December 1887, was published, the Madras Railway had definitely declined to be bound by the minima therein fixed, as being in contravention of the terms of contract. The Madras Railway relied on the orders of the Secretary of State who approved of the principle of sanctioning the maxima rates, below which the Railway Company was free to change actual charges made to the public as circumstances might, in their opinion, render necessary. This position was maintained by the Madras Railway in connection with the question that arose regarding their proportion of the through rate from Bombay to Bangalore Cantonment, *viâ* Arkonam and Jalarpet, which fell below the minimum of $\frac{1}{10}$th pie and worked out to something like $\frac{1}{20}$th pie per maund per mile, which was considerably lower than the cost of haulage on that line. The matter was referred to by the Madras Government to the Government of India, whose decision was as follows :—

"The Government of India do not propose to take action in this matter at present. But if the administration of the Madras Railway at any time in future quotes rates over its line for goods traffic which go below the State Railways minima, a protest should be finally lodged against such rates and the railway requested to keep them within the State railways' minima; and if it declines to do so its action should be reported for orders of the Government of India."

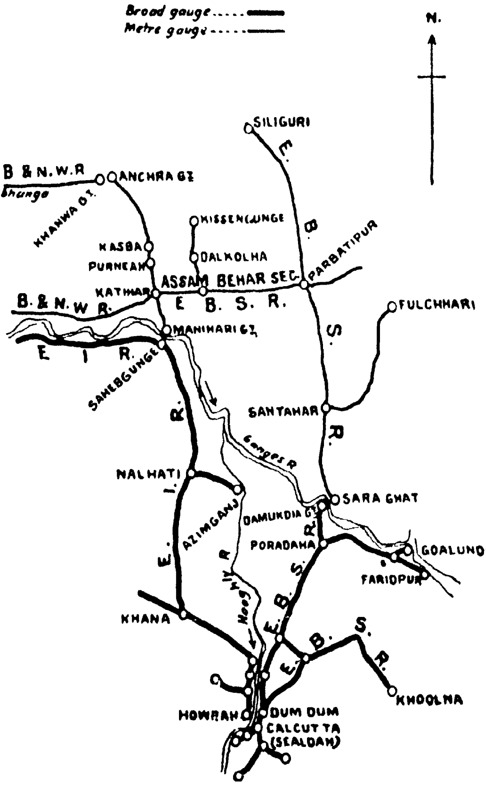
The rate was, however, withdrawn by the Madras Railway.

Any such contingency has, however, now been rendered impossible by the introduction of the Government maxima and minima rates over the Madras Railway after it was acquired by the State.

In 1902, *i.e.*, at the same time that an agreement was executed between the East Indian and Bengal and North-Western Railways, another agreement was made between the East Indian and Eastern Bengal State Railways, whereby the East Indian Railway route *via* Sahebganj and Manihari obtained a share of the important jute traffic from the Eastern Bengal State Railway stations on their Kissenganj and Purneah branches to Calcutta, both in regard to despatches to stations on the Howrah side as well as to stations on the Calcutta side, for instance Chitpur. This was before the opening of the Katihar-Godagari route.

Agreement between the E. I. and B. S. Rys. for traffic from the Assam-Behar Section of the E. B. S. Ry. to Calcutta.

No. 28



The distances, say from Purneah, Kasba and Kissenganj, to Chitpur *viâ* Damukdia and Sara and to Howrah and Sealdah *viâ* Manihari Ghat and Sahebganj compare respectively as follows :—

	Viâ Sara and Damukdia.	*Viâ* Sahebganj and Manihari.
	Miles.	Miles
Purneah	351	259
Kasba	356	263
Kissenganj	346	301

This agreement was however revised on the opening of the Katihar-Godagari route in 1909.

Application of $\frac{1}{10}$th pie minimum to ordinary class goods on the B. N. and Madras Rys. to meet water competition.

Before the East Coast Railway was divided between the Bengal Nagpur and Madras Railways, it had the permission to quote class rates down to $\frac{1}{10}$th pie per maund per mile on the section Samalkot to Bezwada instead of up to $\frac{1}{8}$th pie per maund per mile only, which is the recognised minimum for class goods, the $\frac{1}{10}$th pie being the minimum for special class goods only. This differentiation was made in order to meet the canal competition. The Madras Railway, after taking over the line, had special investigations made, and found that, in addition to the competition by water transport between Cocanada, or say Samalkot, and Bezwada by the Krishna and Godavari delta canals, there was canal competition almost right throughout the length from Madras to Bezwada as well. This competition was described to be keener than the competition by the delta canals. Therefore an application was made by the Madras Railway for sanction to the special minimum of $\frac{1}{10}$th pie for class goods on the entire section of the East Coast Railway from Waltair to Bezwada. About the same time the Bengal Nagpur Railway also represented that on the section between Cuttack and Waltair they had to meet with keen competition by sea, and asked for the sanction to the lowering of the minimum on their portion of the East Coast Railway also, *viz.*, from Waltair to Cuttack, to $\frac{1}{10}$th pie per maund per mile for all goods ; the applications of both the Madras and the B. N. Railways were granted.

1903. Railway Commission to enquire into the question of best means of connecting India with Ceylon.

In 1903, there were about 27,000 miles of railway open for traffic, of which 25,600 were in India and the rest in Burma.

The important question of effecting a connection between the Indian Railway system of 5′-6″ gauge and the Ceylon Railways on the same gauge was enquired into by a Commission, which also dealt with the best means for linking Mysore with Southern India, and the suggested conversion to metre gauge of everything west of Erode. The Commission made the following recommendations :—

" (*i*). From a consideration of the evidence in regard to the needs of the districts lying south of Trichinopoly the Commissioners have no hesitation in recommending, as the southernmost section of the required link, an alignment from Ramesvaram *viâ* Ramnad, more or less direct to Trichinopoly.

"(*ii*). Northwards from Trichinopoly, the information before the Commission points, both from the railway point of view and from that of the local interests of the districts traversed, to additional railway communication being required for the purpose of opening up the country in that direction. The balance of local evidence seems to be in favour of an alignment from Trichinopoly in the direction of Tirukkoyilur. But, from a point on that alignment near Chinna Salem or Kallakurchi, the evidence given on behalf of the railways interested, is in favour of a railway westwards to join the Madras Railway at Salem, or Jalarpet, or somewhere south of the latter place. The information given to the Commission, however, establishes the fact that, as a through connection, the suggested diversion of the line towards Salem or Jalarpet would cause a long detour to traffic and force it over heavy grades. The Commissioners, therefore, do not approve of the proposed alignment from Chinna Salem westwards, but recommend that the alignment should take a north-easterly direction, roughly corresponding to that proposed by the Madras Government for the Trichinopoly-Tirukkoyilur Railway—a project which, since the commencement of the Azhikal-Mangalore line, stands first in order of precedence on their list of new railways. As to the exact point at which the alignment should strike the South Indian Railway between the limiting points of Tirukkoyilur and Panruti—on the west and east respectively—which are referred to in the papers dealing with the Trichinopoly-Tirukkoyilur Railway proposals as possible junctions with the South Indian Railway, neither the evidence given nor the information before the Commission affords sufficient material for a definite decision.

"(*iii*). It seems clear however that, whatever junction is selected between these limiting points the proposed broad gauge link should extend thence northwards either by a new line from Tirukkoyilur to Arkonam or by conversion of the metre gauge from Villupuram to Madras—in the latter case a third rail being laid from Villupuram and the point of junction finally preferred, should it lie to the east or west of that place. The northern terminus of the new broad gauge link, which the Commission recommend, would thus be either Arkonam or Madras according to which of the above alternatives is finally adopted as a result of the further investigations which the Commission think should now be made.

"The link from Ramesvaram *via* Ramnad and Trichinopoly to Arkonam or Madras on the alignment thus recommended, together with the projected connection from Warangal to the north-east branch of the Great Indian Peninsula Railway would complete the required connection between the broad gauge systems of Northern India and Ceylon by the most direct route practicable. And, as regards the portion south of Arkonam, or Madras, the route selected would offer more favourable conditions for the haulage of through traffic than any alternative route. *It would, also, interfere less with existing arrangements for the* *carriage of traffic*, open out a larger area of new country requiring railway communication either for commercial or famine protective purposes, and follow an alignment more suitable for cheap railway construction, than any other proposal laid before the Commission.

"A considerable amount of evidence was offered to the Commissioners in regard to the strategical value of the various proposed alignments. The advice of the Commission on this point has not been specially asked for and the Commissioners will, therefore, only remark that a line which affords facilities for the conveyance of a considerable traffic with economy and despatch under ordinary conditions is less likely to be found wanting in time of emergency than lines not so favourably situated for trade. The location of the proposed link, on the alignment recommended by the Commissioners, would ensure its carrying an important traffic from the outset.

The connection between Mysore and South India.

"It follows, from the recommendations made by the Commissioners in paragraph (*i*) above, for the broad gauge link, that any necessity for the conversion, back to the broad gauge, of the Trichinopoly-Erode section is eliminated, and the natural connection between Mysore and the South Indian and metre gauge lines, namely, that originally proposed, *viâ* Erode, should, they consider, be adopted when required.

The Palghat-Palni-Dindigul line.

"It being understood from the evidence preferred, that the lines within the Coimbatore and Madura districts, which go to make this connection, will be undertaken by the Boards of the two districts concerned, the Commissioners recommend that it may be left to them to construct these lines in the first instance; also leaving to them the decision as to whether the alignment should run from Pollachi to Podanur junction and on to Coimbatore, or from Pollachi to Palghat. Bearing in mind, however, the possibility of this line in the future being made on the broad gauge and extended east of Dindigul to meet the broad gauge link, the Commissioners recommend that, while it is made at first on a light or narrow gauge formation, the alignment and the bridge masonry should be made suitable for a broad gauge line.

The conversion, to metre gauge, of the broad gauge line west of Podanur.

"Such evidence as was tendered to the Commission in connection with the suggested conversion was opposed to it, as being uncalled for, and in this view the Commissioners concur."

In the evidence before this Commission one or two important points in regard to Railway rates came up; such as the following:—

The Traffic Manager of the Madras Railway, in advocating the conversion of the Bangalore-Guntakal Section from metre gauge to broad gauge, brought forward the argument that as the line from Bangalore to Guntakal was in the hands of the Southern Mahratta Railway Company, it was obviously to their interest and advantage to quote high rates towards Bangalore and low rates for long lead traffic; and thus the Madras port suffered.

It was pointed out by the Commission, that the Madras Railway were attempting to carry traffic between Bangalore and Bombay around Arkonam, which meant the broad gauge route carrying for 409 miles what a metre gauge and broad gauge route combined would carry for a distance of 174 miles only, *viz.*, between Bangalore and Raichur *viâ* Guntakal.

The Madras Railway Traffic Manager replied that this competition no longer existed, but that in regard to stations on the Guntakal-Bangalore section the merchants were at a disadvantage. He summed up the position as follows:—

"The Bangalore merchant has 2 railways, but the man who is a little away from the line is blocked from getting into Bangalore. By being barred from all the benefits of Madras Finance, he has to do all his business from Bombay, which is so much further away. He loses the benefit of his geographical position."

In some cases it does not seem that the position has very much improved with the amalgamation of the Madras and Southern Mahratta Railways. For instance, while the 1st class rate (which includes "Special class") from Hindupur to Madras for 281 miles is Re. 0-7-5, the Madras and Southern Mahratta Railway proportion of the through rate to Bombay for their length of the line, 312 miles, is Re. 0-6-5 for "Special" class goods.

Agreement between E. I. and G. I. P. Rys. to terminate competition, which followed the amalgamation of I. M. and G. I. P. Rys.

In 1903, the Great Indian Peninsula and the East Indian Railways thought it fit to terminate the competition which had followed the amalgamation of the Indian Midland and Great Indian Peninsula Railways, and an agreement was come to between the Great Indian Peninsula and East Indian Railways, whereby the Great Indian Peninsula Railway agreed to withdraw from competition for traffic from East Indian Railway stations to Bombay *viâ* Katni and *viâ* Manikpur, and to let it go *viâ* Jubbulpore on the East Indian Railway agreeing that they would allow grain traffic to Bombay from their stations to *viâ* Jubbulpore, a rate not exceeding ⅛th pie per maund per mile; or in other words, the East Indian Railway were not to quote "block rates" *viâ* Jubbulpore. Similarly, they were also not to charge more than ¼th pie per maund per mile on iron, sugar, kerosine oil and other special and 1st class goods when booked from East Indian Railway stations to Bombay, *viâ* Jubbulpore. This was a very important concession on traffic to Bombay, but it was withdrawn in 1905.

B. N. Ry. new Jherria branch not allowed to

The entrance of the Bengal Nagpur Railway into the Jherria coal fields did not give the coal trade of Calcutta that advantage in respect of the export coal trade which was expected.

carry export coal to Calcutta owing to its rates, in equalisation with the E. I. Ry. shorter route, falling below the minimum of $\frac{1}{10}$th pie per maund per mile.

The East Indian Railway had already quoted their rate for export coal on the minimum of $\frac{1}{10}$th pie per maund per mile, which prevented the Bengal Nagpur Railway giving the same facilities in the matter of railway freight to the Calcutta traders.

The Bengal Nagpur Railway had equalised with the East Indian Railway rate by going below the minimum, but on the East Indian Railway bringing this to the notice of the Government, the Bengal Nagpur Railway, were prevented from doing so, with the result that while there were complaints of short supplies of wagons to collieries on the East Indian Railway, the Bengal Nagpur Railway new line was not doing much traffic. While this was the position, there was a proposal under consideration of the Bengal Government for the construction of Docks at Luff point, for which some of the Coal Companies gave a guarantee of 7 lakhs of tons of coal for export to be dealt with at this point in case the Docks were built there. The Bengal Nagpur Railway, in the meanwhile, submitted proposals, in connection with the Luff Point Scheme, to shorten the distance by construction of 2 chords on their Midnapur-Jherria line.

Luff Point coal Depôt proposed by Calcutta merchants and examined by a Commission.

The following statement gives the distances from various points in the fields to Kidderpore *viâ* the East Indian Railway and the Hooghly Bridge, and to Luff Point *viâ* the Bengal Nagpur Railway by Khargpur and the proposed branch from Panchkura :—

Despatching station.	Distance to Kidderpore.	Distance to Luff Point.	In favour of Kidderpore.	In favour of Luff Point.
1	2	3	4	5
Jherria coal fields.	Miles.	Miles.	Miles.	Miles.
Bhowra	192	184	..	8
Bhaga Jherria	187	186	..	1
Mulkhera Katrasgarh	191	195	4	..
Kusunda	183	192	9	..
Chowrashi field.				
Chowrashi	164	172	8	..
Sanctoria field.				
Sanctoria	156	186	30	..
Raniganj field.				
Asansol	144	184	40	..
Sitarampore	150	190	40	..

Taking the same despatching points as above, and considering the construction of 2 chords, *viz.*, the upper or Jantipahari chord and the lower or Garbita Pashkura chord, the distances compared as follows :—

Despatching station.	Distance to Kidderpore.	Distance to Luff Point.	In favour of Kidderpore.	In favour of Luff Point.
1	2	3	4	5
	Miles.	Miles.	Miles.	Miles
Jherria coal fields.				
Bhowra	192	158	..	34
Bhaga Jherria	187	160	..	27
Mulkhera Katrasgarh	191	169	..	22
Kusunda	183	166	..	17
Chowrashi field.				
Chowrashi	164	146	..	18
Sanctoria field.				
Sanctoria	156	145	..	11
Raniganj fields.				
Asansol	144	143	..	1
Sitarampore	150	149	..	1

Vishnupur-Howrah Line was taken into consideration, and the distances worked out as follows to Kidderpore *viâ* the East Indian Railway and *viâ* the Bengal Nagpur Railway *viâ* Vishnupur :—

Despatching point.	Kidderpore *viâ* East Indian Railway and Hooghly Bridge.	Kidderpore *viâ* Bishenpur and wagon ferry.	Kidderpore *viâ* Bishenpur and Bally Bridge.	Luff Point *viâ* Chords.
1	2	3	4	5
	Miles.	Miles.	Miles.	Miles.
Jherria fields.				
Bhowra	192	158	166	158
Bhaga **Jherria**	187	159	167	160
Mulkhera **Katrasgarh**	191	168	176	169
Kusunda	183	165	173	166

Despatching point.	Kidderpore *viâ* East Indian Railway and Hooghly Bridge.	Kidderpore *viâ* Bishenpur and wagon ferry.	Kidderpore *viâ* Bishenpur and Bally Bridge.	Luff Point *viâ* Chords.
1	2	3	4	5
Chowrashi field				
Chowrashi	164	145	153	146
Sanctoria field.				
Sanctoria	156	159	167	145
Raniganj field.				
Asansol	144	157	165	143
Sitarampore	150	163	171	149

While the colliery owners interested in the Jherria field supported the Luff Point Scheme and the construction of the chords proposed by the Bengal Nagpur Railway to reduce the distance, those interested in the Raniganj and Sanctoria fields were opposed to it. Similarly, while the British India Steam Navigation Company were strong advocates of the Luff Point Scheme, the Calcutta Port Commissioners were naturally opposed to it.

The conclusion arrived at by the members constituting the Luff Point Commission was as follows :—

" We consider that there is no physical impossibility in providing facilities at Luff Point for the accommodation and shipment of coal. We consider however, that it would not be prudent to incur any large expenditure without first ascertaining by means of careful observations of the currents and eddies throughout the year whether vessels could at all times make use of jetties and of other facilities. We are of opinion that the expenditure required to maintain any works at, or in the neighbourhood of, Luff Point would be considerable on account of the erosive action to which the right bank of the Hooghly in this locality is subject.

" We are of opinion that it is not under existing conditions desirable to establish a coal depôt at or near Luff Point, as this would be of little, if any, use to the coal industry as a whole.

" We are of opinion that, if, at some future time, it should be found necessary or desirable to establish such a depôt, or an auxiliary port in any form at Luff Point, or at any other place on the Hooghly, such depôt or port should be established and controlled by Government through the Commissioners of the Port of Calcutta."

The question of equalization of freight by the existing East Indian Railway and Bengal Nagpur Railway routes was not taken into consideration by the Commission, perhaps because it did not fall within the scope of their enquiry.

Effect of reduction in rice rates over the S. I. Ry.

In the year 1903, the South Indian Railway ascertained by actual examination of statistics that their traffic in rice for distances of over 350 miles was not large, and as their enquiries showed that long distance traffic in this commodity could develop by low rates, they reduced the rate for rice when carried for distances beyond 350 miles to the absolute minimum of $\frac{1}{10}$th pie per maund per mile in November 1903. A statement is appended below showing the weight and money receipts of the traffic in rice of the South Indian Railway from 1901 to 1906 :—

	Tons	Rs.
1901	231,380	7,12,540
1902	205,646	6,31,256
1903	229,255	6,61,565
1904	219,469	7,58,421
1905	262,088	9,20,562
1906	264,376	9,75,572

It will be observed from the above comparison that in 1904, although the weight of the traffic did not increase and was in fact about 12,000 tons less than in 1901, yet the earnings were better by more than Rs. 45,000, thus indicating that within the first year of the reduction the traffic commenced moving for long distances. But this was not all. The traffic began to grow, and it is observed that in 1905 and 1906 the despatches were considerably larger. The rice traffic of 1906 was better than that of 1901 by no less than 33,000 tons or 891,000 maunds, which could not have taken place without a considerable expansion of the area under cultivation in the districts served by the South Indian Railway. While this large increase in the weight of traffic amount to 14 per cent., the differences between the earnings of 1901 and 1906 was Rs. 2,63,000 or the improvement was 37 per cent., which would not have taken place but for the reduction. The Traffic Manager of the Railway not only reduced the rate but invited the help of a very influential financier and merchant, who was granted a permanent 1st class free pass to travel about in developing the business. He practically did the work for which the Company would have had to employ several canvassers.

Railway Commission.

A special Railway Commissioner, in the person of late Mr. Thomas Robertson, C.V.O., was deputed by the Secretary of State for India in 1901, to enquire into the administration and working of Indian Railways. Mr. Robertson travelled widely throughout India and America, and submitted a report on the administration and working of Indian Railways

Enquiry by a Special Ry. Commissioner and his report.

in 1903. He dealt with the question of Indian Railways and their future development, and it was on his report that the present Railway Board was formed. But this does not come within the sphere of this book which only deals with the question of Railway rates. He gave his opinion in a general sort of way that taking the cost of construction and working of Railways in England and comparing them with the cost of construction and working of those in India, the fares and rates in India should, broadly speaking, be only ⅛th of those charged in England, and comparing the rates for passenger mile, for goods unit (one ton) for one mile he gave the following comparisons :—

PASSENGERS.

Rates per passenger per mile.

	England (including season ticket holders).	India (excluding season ticket holders).
	Pies.	Pies.
First class	19·68	19·75
Second class	13·08	5·49
Third class	9·84	2·31

GOODS.

Rate per ton per mile.

	Pies.	Pies.
Merchandise	23·76	6·72
Minerals	9·34	3·55

He further remarked that the reduction in passenger fares should be from 18 to 40 per cent., in general merchandise from 30 to 60 per cent., and in coal from 40 to 60 per cent., and also pointed out that such low rates were obtainable on American Railways. He also observed that reductions were particularly needed for long distance traffic and that in this respect the application of telescopic and sliding scales of rates should be on the through distance of all the railways from the place of origin to destination, instead of the traffic being charged at the local rates of each railway.

Any comparison between the conditions of traffic on Indian Railways with those of American Railways is not always safe, except in connection with the coal traffic of the Bengal lines and perhaps also with the wheat traffic of the North Western Railway.

Even in the case of grain traffic, it is not that one place gives train loads or several wagon loads ; the traffic has to be collected from station to station on several railways. Empty running of wagons on Indian Railways is also very heavy owing to the traffic, especially to the ports and from the collieries, being out of proportion to traffic from the ports and to the collieries. In some cases the empty running of wagons is very large and for considerable distances.

So far, however, as the rates for coal are concerned, the reductions in the rates for long distances have been from 40 to 50 per cent., since the date of late Mr. T. Robertson's report, as will be seen from the following comparison of rates for coal to Lahore, Bombay and Karachi in 1902 and 1907 :—

	1902.			1907		
	Per ton			Per ton		
	Rs	A	P.	Rs	A	P
Lahore	16	9	0	9	13	0
Bombay	21	7	0	11	4	0
Karachi	25	2	0	12	10	0

As regards the rate for general merchandise his suggestions, about through rates to develop long distance inter-provincial traffic, have been dealt with in the chapter on through rates Another suggestion of his to do away with the minimum rate on Indian Railways has also been discussed in the chapter on maxima and minima rates. He also made another important suggestion to the effect that "slack season" and "busy season" rates should be quoted in order to reduce the stress on Indian Railways in busy seasons. This practice prevails on the Eastern Bengal State Railway in connection with jute traffic ; but when the demand for jute is great and the market is varying with the tendency for the prices to go up, the traffic cannot wait. Slack season in India is the rainy season, and the country being agricultural and the great bulk of the population being of the peasant class, the people are all engaged in agricultural operations during the monsoons. Their bullocks and carts are not available for the carriage of produce from the interior to the railway during this period. But the most important points in connection with the distribution of traffic evenly throughout the year are the trade conditions, the financial conditions, and the agricultural conditions. The produce of India is available for export after the monsoons, for both the autumn and winter crops (cotton and corn are autumn crops ; rice is both autumn and winter crop ; and wheat, pulses, gram and seeds are winter crops) must be disposed of by the ryot the moment they are ready for sale for the reason that it is on his production that he is dependent for his whole year's expenditure. He has to pay his rent to his landlord, and sometimes interest on advances of money he may have borrowed from the money-lender and he dares not run into arrears in any of these.

Then, the Indian buyer, except in rare cases when he is sure of a better price due to a future rise in the market, purchases for immediate sale either to the shipper, or to mills in India, or to merchants in large towns. The middleman is generally one with small capital, and he cannot afford to lock up his money by holding goods. The shippers also, as well as the mill-owners, have to regulate their purchases according to demand, the former book their freights beforehand and it is risky not to take advantage of available freight at a fair margin of profit by sale immediately; and the mill-owners, who have to pay dividend to their shareholders, in some cases half-yearly, cannot increase the amount of their "block working capital" by storing either the raw produce or the manufactured articles. The important crop in India which is available for despatch during the monsoons is jute, and there are "busy season" and "slack season" rates for jute.

Another very important factor to be borne in mind, in connection with Mr. Robertson's recommendation for reduction of rates, was not only the loss that would have had to be faced, if such wholesale reductions were made, but, even admitting that the traffic advanced in proportion to the reduction of 30 to 60 per cent. in the case of general merchandise, and 18 to 40 per cent. in the case of passengers, there would be large sums of money required to meet the additional traffic first to recoup the loss; or, in other words, a very large amount of traffic would have to be carried at the low rates in order to bring up the receipts to the level of those previous to the reduction, before one could think of increase in receipts over and above the loss by reduction.

Therefore, the financial aspect of Indian Railways, in which the Government is so directly concerned, should be taken into consideration, as the future development of Indian Railways depends on the prosperity of the present lines and to some extent on the surplus of revenue (after meeting all charges in the way of interest on borrowed capital, payment of annuities in redemption of capital, etc.), that may be available for expenditure on additional facilities on new lines and on the extensions of railway mileage. Any large wholesale reduction would at once tell on the revenues of the railways and cripple their power not only in the matter of additional railway mileage but also in connection with facilities required on open lines.

1904. Dadar 'minimum rate could not be applied to Bombay although the Shalimar

In January 1901, the Great Indian Peninsula Railway raised the point that if the Bengal Nagpur Railway were competent under the authority of the Government to make the same charge to Kidderpore Docks as to Shalimar in the matter of minimum rates they (the Great Indian Peninsula Railway) would be justified in quoting minimum rate up to say Dadar, the nearest of the terminal station in Bombay, from stations up country and to apply Dadar minimum rate to Bombay, 5 miles further. The Government of India held that the two cases were not analogous, in that, while Howrah and Shalimar were terminus stations in Calcutta on the Howrah side of the river, Kidderpore Docks, Chitpore, etc., were terminal stations in Calcutta on the Calcutta side of the river, and that while the application of the Howrah and Shalimar rates to Kidderpore Docks were considered justified by the circumstances of the situation (it being recognised as expedient that there should not be any difference in freight charges on up country goods sent to and from Calcutta whether they were dealt with at Howrah or at Kidderpore, and that the charges for long distance traffic should be the same to and from all termini in Calcutta), the case of Dadar was considered different, for while Dadar was situated on the island of Bombay it was some 5½ miles short of Bombay terminus and did not occupy the same position to Bombay as Howrah and Shalimar did to Kidderpore.

rate was quoted to Kidderpore Docks, as the two cases were not analogous.

About the same time another question was raised as to whether the Howrah terminals should be taken into account or not in the case of minimum rates to Howrah over the East Indian Railway. The objection was that in some cases if the Howrah terminal was deducted from the through rate, the balance worked out to less than the minimum rate prescribed by the Government. The East Indian Railway held the view that it was optional with the railway administration whether to charge the terminal or not. It was however pointed out that in the case of Howrah 2 pies per maund had to be paid to the Port Commissioners by the East Indian Railway for the use of the Howrah bridge by all traffic consigned to Howrah, and this being the position, it was held that the terminal charges at Howrah ought to be deducted in order to ascertain whether the rate charged for conveyance was or was not below the minimum prescribed.

Howrah terminal deducted to ascertain whether the rate charged was below the minimum or not.

In 1901, the East Indian Railway made a representation that the opening of Allahabad-Fyzabad Railway, with a branch from Phaphamau to Jangai, would mean loss of revenue to the East Indian Railway, and that, therefore, the East Indian Railway should be allowed running powers over the Phaphamau-Jangai Railway; and it was also asked that the Government of India should issue a rule to the effect that the traffic from the Allahabad-Fyzabad section of the Oudh and Rohilkhand Railway to Bombay should take the shortest route which would be over the East Indian Railway *via* Jubbulpore for a number of stations. It was held by the Government that the running powers over the Phaphamau-Jangai Railway were not needed by the East Indian Railway, and it was also intimated to the East Indian Railway that the matter of adjustment of rates must rest entirely with the railway administrations interested, and that the Government did not consider it necessary to interfere.

Matter of adjustment of rates of, and running powers over, the Phaphamau-Jangai Ry. not granted to the E. I. Ry.

Traffic from Katni and viâ to Calcutta and vice versâ divided between the E. I. and B. N. Rys., but not from Agra and Cawnpore, as the E. I. Ry. route was shorter.

On the opening of the Bengal Nagpur Railway to Howrah from the beginning of 1901, the distance between Katni and Howrah, which was 676 miles by the all East Indian Railway route and 705 miles by the combined East Indian and Bengal Nagpur Railway route *viâ* Asansol, was reduced to 641 miles by the all Bengal Nagpur Railway route *viâ* Sini and Kharagpur. The Bengal Nagpur Railway not only now claimed a larger share of the traffic from Katni and places adjacent to it, but also put forward their claim for traffic to Agra and Cawnpore *viâ* Katni and the Indian Midland Railway, and threatened to combine with the Indian Midland Railway, who offered an alternative route between Katni and Agra and Katni and Cawnpore. Between Howrah and Agra, the East Indian Railway direct route was shorter by 195 miles, and similarly for Cawnpore by 352 miles. Therefore, the East Indian Railway declined to entertain the claim of the Bengal Nagpur Railway to traffic from places like Agra and Cawnpore, but it could not resist the claim of the Bengal Nagpur Railway to traffic from such Indian Midland stations to Calcutta for which the route *viâ* the Bengal Nagpur Railway and Indian Midland Railway was the shortest. Therefore, the traffic from Katni and *viâ* Katni (Indian Midland Railway) to Calcutta and *vice versâ* was divided between the East Indian and Bengal Nagpur Railways in the ratio of $\frac{7}{10}$ths to the East Indian Railway and $\frac{3}{10}$ths to the Bengal Nagpur Railway; and as for stations on the East Indian Railway section, from Asansol to Bally, it was accepted that the division should be equal, and that, so far as Bengal Nagpur Railway were concerned, they would only be allowed to carry the traffic up to Asansol, and not *viâ* Howrah. The Bengal Nagpur Railway were not to compete for traffic for Agra and Cawnpore *viâ* Katni-Marwara in combination with Indian Midland Railway and also not for traffic to and from stations on the Jhansi-Manikpur section of the Indian Midland Railway for which the route to be recognised was the Manikpur route. So far as rates from Katni and *viâ* Katni to Calcutta and also for traffic to and from stations on the Asansol-Bally sections were concerned, they were to be equal by both the East Indian Railway and the Bengal Nagpur Railway routes.

Equal rates to Calcutta, on export coal, from the Jherria Field.

Shortly after the Luff Point Committee closed its proceedings, the Indian Mining Association made a representation to the Government to the effect that the conditions laid down by the Simla Committee of 1900 by the Government in connection with the development of Jherria Coal Fields were :—

"That both railways shall share equally in the extension of traffic and have equal or reciprocal facilities for dealing with it and that coal owners shall be able without difficulty to despatch their coal by either railway as they may choose;" but that from the fact of the distance from the Jherria Coal Fields to Calcutta by the Bengal Nagpur Railway being longer than the route *viâ* the East Indian Railway, the minimum mileage rate question came in, and that in the case of export coal, the Bengal Nagpur Railway route was shut out. It was also represented that in making contracts, the railway freight, less the rebate, was always taken into account in giving quotations to intending buyers, and that, therefore, the collieries on the length Bhaga to Mulkhera on the Bengal Nagpur Railway new Jherria extension were debarred from sending export coal by the Bengal Nagpur Railway route. A meeting was held between members of the Mining Association and the Member of the Viceroy's Executive Council, in charge of the Public Works Department, in Calcutta on 26th January 1904 to consider the question, and at the meeting the Secretary to the Government of India, Railway Branch, and the Director of Railway traffic were also present. While the question of equalisation of rates by the Bengal Nagpur Railway in the case of export coal was not settled at the meeting it was pointed out by the Member in charge of the Public Works Department that the Bengal Nagpur Railway were yet able to allow some rebate (though not equal to that allowed by the East Indian Railway) in connection with the despatches from Mulkhera and Bhaga, as the rate per ton from these places by the Bengal Nagpur Railway were 51·75 annas whereas the minimum rates permissible at $\frac{1}{10}$th pie per maund per mile were 47·25 and 45 annas respectively, and that before the Mining Association asked the Government to allow the Bengal Nagpur railway to infringe the minimum, the railway should be asked to take advantage of the present minimum.

Representation by the Indian Mining Association to the Government to allow the B. N. Ry. coal rate from Jherria field to Calcutta to be the same as that of the E. I. Ry.

However, the East Indian Railway Board of Directors realised that it was much the best thing to come to a settlement with the Bengal Nagpur Railway and to give effect to the intentions of the proceedings of the Simla Committee of 1900; and an agreement was concluded between the two companies in London towards the end of 1904 in which it was accepted that the freight on coal by both railways from all stations in the Jherria Coal Field to Howrah, Shalimar, Kidderpore Docks, Bracebridge Hall and other Calcutta stations should be equalised, and that the distance for charge from all sidings and stations of the two railways in the Jherria field should be taken by both routes as 170 miles irrrespective of actual distance. It was also accepted that in the case of collieries on the East Indian Railway in the Jherria field, desiring to send coal to Calcutta *viâ* Bengal Nagpur Railway, the East Indian Railway would call upon the Bengal Nagpur Railway for supply of wagons, and that in the case of such despatches, and while there would be no extra freight chargeable to the public, the Bengal Nagpur Railway would out of their proportion pay to the East Indian Railway freight for 20 miles; and exactly similar arrangements were also agreed to in the case of despatches from collieries on the Bengal Nagpur Railway to Calcutta in East Indian Railway wagons and by East Indian Railway route.

E. I. Ry. and B. N. Ry. Board of Directors agreed that the coal rate from Jherria coal field to Calcutta to be equal by both routes.

Agreement between the I. G. S. N. and R. S. N. Companies and the E. B. S. and A. B. Bys. in respect of through traffic viâ Goalundo and viâ Chandpur.

The agreement between the India General Steam Navigation Company and the Eastern Bengal State Railway had not been considered satisfactory by the railway for some time past, and a revision of the agreement was suggested, but taking the interests of the public (jute merchants and the jute mill-owners in Calcutta) it was accepted that the relations between the Steamer Companies and the railway should be amicable.

It may be useful at this stage to state briefly the circumstances which led up to the point when the cancellation of the agreement between the Steamer Companies and the Eastern Bengal State Railway was thought of.

Before the Eastern Bengal State Railway made over their flotilla to the India General Steam Navigation Company for working the goods traffic between Goalundo and certain marts on the Ganges and Brahmaputra (such as Serajganj, Berah, Narainganj and Dacca), the traffic between Calcutta and these marts was practically in the hands of the railway. In giving up their flotilla to the steamer companies, the railway company made a condition that in respect of the carriage of goods traffic between Goalundo and Calcutta, the steamer company would be bound to consider the railway route as preferential. But in order to serve the interests of the public best, the railway did not rigidly adhere to this condition in the agreement. It was accepted that the steamer company might carry direct to Calcutta, each half year, to the extent of one-half of the total traffic (up and down) to and from the marts in question, but that if the steamer company carried more than half they would be penalised to the extent of 3 pies per maund on the excess quantity over and above their half share. The penalty was kept at the nominal figure so that there might be no obstacle put in the way of the public taking advantage of the steamer route. It was also agreed to by the railway that for the time they notified restrictions of traffic *viâ* Goalundo, the steamer company would be justified in carrying more than its half share by their direct service *viâ* the Sunderbans. The Eastern Bengal State Railway felt that the steamers were carrying direct to and from Calcutta more traffic than they should, and, therefore, it was thought that the agreement was not being worked satisfactorily from the point of view of the Railway, and a claim was made by the railway for penalty and the matter was referred to arbitration. Amongst other things the arbitrators held that as the steamer service during such period brought to the railway as much goods as the railway were able to clear and despatch, the excess traffic of the direct service should not be penalised, and that the goods traffic carried by the Goalundo despatch service should not be included in the traffic of the direct service. The steamer companies represented that they were bringing as much traffic as the railway could carry. In the meanwhile, the Assam-Bengal Railway Company made a complaint that the steamer companies were not giving them satisfaction in respect of traffic between *viâ* Chandpur and Goalundo, and that in times of pressure the railway traffic suffered.

Under these circumstances both from the point of view of the steamer companies (India General Steam Navigation and River Steam Navigation which were now working jointly) and of the railways, it was agreed that the agreement should be revised, and two separate agreements were made in 1904.

One was for a daily steamer service between Dhubri and Gauhati for all coaching and goods traffic to and from Tezpore and Dibrugarh and other stations in Assam, and the other was for traffic between Goalundo and Chandpur.

It was accepted by the railways and the steamer companies in regard to *viâ* Gauhati traffic that every facility should be afforded by both railways (*viz.*, Eastern Bengal and Assam-Bengal Railways) and the two steamer companies (*viz.*, India General Steam and River Steam Navigation) for through booking with the Assam-Bengal Railway and Dibru-Sadia Railway *viâ* Dibrugarh. It was also agreed that the steamer companies' direct service rates shall form the basis of rates to be quoted for the combined railway and steamer service *viâ* Gauhati, and that the difference in favour of the direct service shall not be more than 25 per cent.

In the other agreement relating to Goalundo-Chandpur traffic it was provided that the steamer companies should make the daily clearance of all coaching traffic and of all goods traffic not less than 2,500 maunds each way, to and from *viâ* Chandpur, any surplus cargo left behind being carried by special arrangement next day. The rates by the combined railway and river routes were to be the same for the special and 1st class goods as those between Calcutta and Chandpur and *viâ* by the Steamer Companies direct despatch service *viâ* the Sunderbans. Similarly in the case of traffic between Calcutta and Chittagong it was accepted that in booking *viâ* Goalundo, the through rates by the combined railway and steamer routes *viâ* Chandpur would be the same as those by the steamer companies direct service *viâ* Sunderbans, except for hides, garlic, medicines, safflower, and spices, for which the rates by the combined route would be higher.

Reduction in the 3rd class passenger fare by the E. I. R.

The East Indian Railway made a reduction in the fares for third class passengers, and the proposal was to charge 2½ pies for distances up to 100 miles, and 2 pies to 300 miles, and 1½ pies for all distances beyond. It was estimated that the general result would probably be a loss of 12½ lakhs of rupees a year, supposing that the number of passengers and the distances travelled remained as they were in 1902. But the following progressive figures of the receipts from the coaching traffic of the East Indian Railway from 1902 to 1906 show that the reductions increased the earnings in six years from Rs. 2,19,34,000 in

1902 to Rs. 2,51,01,000 in 1906. There was no decrease in the receipts even in the year following the reduction :—

	Rs.
1902	2,19,34,000
1903	2,29,28,000
1904	2,33,47,000
1905	2,39,28,000
1906	2,51,01,000

1905. Cancellation of agreements of 1898 and 1903 between E. I. and G. I. P. Rys. re equalization of rates between Cawnpore and G. I. P. Ry. stations west of Itarsi.

In the beginning of the year 1905, the East Indian Railway gave notice of the cancellation of agreements come to with Great Indian Peninsula Railway in 1898 and in 1903 relating to the equalisation of rates between Cawnpore and Great Indian Peninsula Railway stations west of Itarsi *viâ* Jubbulpore and Indian Midland Railway routes and to the quotation of equal mileage rates from the East Indian Railway stations to Bombay. The East Indian Railway had, during the continuance of the agreements with the Great Indian Peninsula Railway, realised that while the advantages secured to the East Indian Railway in the matter of sharing the traffic between the Jubbulpore and the Itarsi routes were more than counterbalanced by the East Indian Railway having had to quote rates to the junctions with the Bombay lines, which were below the maximum for short distance hauls, the East Indian Railway was rather handicapped in the matter of quotation of rates to Calcutta, because under the Jubbulpore agreement of 1898, once the Great Indian Peninsula Railway maintained rates to Bombay, by reductions in their own proportions, on the same mileage basis as from East Indian Railway stations to Howrah, the East Indian Railway could make no further reductions to their port.

Just about the time the East Indian Railway were contemplating to cancel these agreements, they found it necessary to quote low rates for grain and seeds in order to encourage shipment of wheat from India to Europe, particularly *viâ* the Calcutta port, from places in the United Provinces north and west of Cawnpore ; it was noticed that during the first half of 1901 the weight of grain and seeds sent from Cawnpore to Calcutta was 91,000 maunds, and to Bombay, 544,000 maunds. In this year (1905) the East Indian Railway also made an application to the Government of India for its minimum rates, in respect of despatches in the downward direction to the Calcutta port, being lowered to $\frac{1}{15}$th pie per maund per mile. In support of this application it was pointed out that while the cost of operation (*viz.*, of carrying one ton one mile) on the Bombay lines was near to the present minimum of $\frac{1}{10}$th pie, the East Indian Railway statistical cost of haulage was far below this figure. This, however, is a point which will be discussed fully in the Chapter on Maximum and Minimum Rates, and we shall for the present proceed to deal with the competition of 1905.

The cancellation of the agreements between the Great Indian Peninsula and the East Indian Railways was followed by an all round reduction in the rates not only to and from the ports of Calcutta and Bombay but also at all competitive points between the Calcutta and Bombay lines, such as for traffic of junctions stations, *viz.*, between Jubbulpore and Delhi, Agra and Cawnpore, Manikpur and Delhi, Agra and Delhi, and Katni and Delhi, etc. Also the withdrawal on the part of the East Indian Railway of all special rates for Bombay traffic from East Indian Railway stations on the length Agra to Delhi and from stations on their Jubbulpore line had the effect of increasing the rates to Bombay. At the same time that the low rates were withdrawn, the East Indian Railway introduced a special terminal of 6 pies per maund on special class goods *viâ* all junctions with the Bombay and Karachi lines.

E. I. Ry. blocked the traffic to Bombay from stations Agra to Delhi and stations on their Jubbulpore line by withdrawing all special rates and imposing a terminal of 6 pies per maund on all special class goods viâ *all junctions with the Bombay lines.*

The Agra-Delhi Chord had been opened by this time, and therefore the Great Indian Peninsula Railway was not very much handicapped in regard rates for the Oudh and Rohilkhund and North Western Railways reached *viâ* Delhi; but they would have been somewhat at a disadvantage in respect of stations between Khurja and Tundla and for the Oudh and Rohilkhund Railway traffic on the Aligarh Branch had not the Bombay, Baroda and Central India Railway combined with the Great Indian Peninsula Railway, and quoted low rates for Bombay traffic *viâ* Hathras, *viâ* Delhi, *viâ* Agra, and continued to include such traffic in the pooling arrangement with the Great Indian Peninsula Railway.

So far as grain and seeds traffic was concerned the rates were brought down to the absolute minimum from all the junctions with the Bombay lines, namely Delhi, Agra, Hathras, Cawnpore, Manikpur, Katni, the only one exception was the junction at Jubbulpore. Reductions were also made in the rates for piece-goods, sugar, kerosine oil, and iron goods.

The East Indian Railway entered into an agreement with the Oudh and Rohilkhund Railway before competition with Bombay lines began. The Oudh and Rohilkhund Railway had for a long time complained that the East Indian Railway low rates quoted to Cawnpore, Aligarh, Ghaziabad, in competition with Bombay, though not applying *viâ* those junctions for the Oudh and Rohilkhund Railway traffic to Calcutta, had the effect of making lower rates obtainable from the Oudh and Rohilkhund Railway stations by re-booking at these junctions than those in force *viâ* Moghalsarai. The Oudh and Rohilkhund Railway claimed *viâ* Moghalsarai the same mileage rates as were quoted by the East Indian Railway to Cawnpore and Aligarh. The case of the East Indian Railway was that they would not be justified in quoting the same mileage rate from Moghalsarai to Calcutta, 469 miles, as they charged for distances 600 to 900 miles. A meeting was, however, held between the Oudh and Rohilkhund and the East Indian Railways in February 1905 (the reduced rates following the cancellation of the Jubbulpore agreement having effect from April 1905), and

Agreement between the E. I. and O. and R. Rys. for reduction and division of rates on traffic between Howrah and stations on the O. & R. Ry. beyond Moghalsarai.

the main point for discussion at this meeting was that the Oudh and Rohilkhund Railway should recognise that in order to attract grain and seeds traffic to Calcutta, which was to the mutual interests of the East Indian and Oudh and Rohilkhund Railways, the Oudh and Rohilkhund Railway should join the East Indian Railway in reductions from their stations to Calcutta *viâ* Moghalsarai. This position being accepted, it was agreed to by the East Indian Railway that the rate quoted by the East Indian Railway between Howrah and any junction stations on that line beyond Moghalsarai (such as Allahabad, Cawnpore, Aligarh, and Ghaziabad) would be applicable, under the operation of the differential rule (which recognises that the charge for smaller distance should not be higher than for the greater distance on the same line and in the same direction), from stations on the Oudh and Rohilkhund Railway short of the junctions, and that the division of the rates should be on mileage, subject to the proviso that whenever the lead of the Oudh and Rohilkhund Railway up to Moghalsarai was less than ⅔rds of the lead of the East Indian Railway from Moghalsarai to Howrah, the Oudh and Rohilkhund Railway in apportionment of the through rate would get 3 to 4 pies per maund over and above their share of the mileage division in recognition of the shorter lead. It was further provided for in this agreement that the routing to and from the Oudh and Rohilkhund Railway internal stations, in order to give that railway a long lead *viâ* Moghalsarai for traffic east of Moghalsarai, was agreed to by the East Indian Railway in consideration of the East Indian Railway retaining the through traffic between the East Indian Railway below Moghalsarai and the Panjab and the other districts beyond Ghaziabad and Delhi. It may be noted here that in the Moghalsarai agreement of 1899 equal rates by both routes were accepted for such traffic, but in 1905 agreement the right of the East Indian Railway to the whole of the traffic was not disputed by the Oudh and Rohilkhund Railway.

Efforts to terminate the severe competition between Rys. of Northern India

A meeting was held between the Traffic officers of the Great Indian Peninsula and the East Indian Railways in March 1905 in Bombay to arrive at a settlement, but it was of no avail. The competition continued and it not only affected the Great Indian Peninsula and the East Indian Railways but also the North Western, the Bombay, Baroda and Central India, the Bengal and North Western, the Oudh and Rohilkhand and the Bengal Nagpur Railways, because whatever rates were quoted from the Oudh and Rohilkhund Railway stations on the length Lucknow to Fyzabad, they had also to be quoted from the corresponding Bengal and North-Western Railway stations north of river Gogra; similarly, any reduction in the rates made by the East Indian **Railway from Katni and Jubbulpore had also to be responded to by decrease in the rates by the Bengal Nagpur Railway. The North Western Railway also could not allow their rates to Karachi to remain high while the rates to Bombay and Calcutta were lowered.**

The Railway Board in August 1905, when the representatives of all the Railways were present in Simla in connection with the Indian Railway Conference, impressed on them the necessity for terminating the competition, and a special meeting was held between the representatives of the railways and the Railway Board. It was accepted between most railways that as competition had been tried to its full length the settlement could only be made on what was termed to be the competitive basis. The East Indian Railway while agreeing that the lump sum rates and differences, except for grain and seeds, should be those as existed prior to 1st April 1905, pointed out that as the lines serving the Calcutta port were worked at a lower cost than those serving Bombay and Karachi, they should be allowed to quote lower minimum rates than those serving Bombay and Karachi, and in this view they were supported by the Bengal and North-Western Railway; but the representative of the Oudh and Rohilkhand Railway, while agreeing that their interests were identical with those of the East Indian Railway, as the despatch of their traffic to Calcutta gave them a longer lead than to Bombay, said that he could not support the view that the Calcutta lines should be allowed a preferential minimum because of the low cost of working. His recommendation was that the readjustment of rates should take place on the actual competitive basis, *i.e.*, the difference that would be reached if railways did their best for themselves and worst for their rivals, or in other words, if they quoted the lowest rates to the port that gave them the longest lead and highest possible rates to the junctions of railways serving ports which gave them short hauls. It was accepted, however, that the railways were losing money by competition, and while the Bombay, Baroda and Central India and East Indian Railways were agreeable to the case being referred to the Railway Board as a Board of Conciliation and to their decision being finally accepted, it was thought by the Great Indian Peninsula Railway that one more endeavour should be made to settle matters mutually, because a reference to the Railway Board should only be made in such cases after every endeavour had been made and been unsuccessful in arriving at a settlement.

Agreement between the E. I. and the G. I. P. Rys. re rating and routing of traffic from places near Cawnpore to Bombay.

An agreement was arrived at between the East Indian and the Great Indian Peninsula Railways soon after this meeting, and it was recognised that in respect of traffic from the East Indian Railway stations in the vicinity of Cawnpore to Bombay, the route to be recognised was the Itarsi route, and that the East Indian Railway were not to quote any but their ordinary rates on such traffic to junctions with the Bombay lines, and that the specially reduced low rates over the East Indian Railway on Bombay traffic agreed to in 1898 and 1903 agreements were not to be reintroduced. As regards reversion to the rates that were in force before the competition started in April 1905, this position was accepted except in the case of grain and seeds, for which the rates lowered during competition were to continue. Sugar rates were enhanced (they had been lowered in some cases from the ports to places like Cawnpore, very nearly to the level of the grain rates) but not to the figures previous to April 1905.

The difference to be maintained at the junctions between the railways serving the Calcutta and Bombay ports was to be the bed rock difference, *i.e.*, the difference that would exist if both railways went down to the minimum.

An arrangement was also made as regards traffic between :—

Manikpur and Agra	Manikpur and Delhi
Katni and Agra	Katni and Delhi
Jubbulpore and Agra	Jubbulpore and Delhi.

The rates were to be equal by both routes, namely by the Great Indian Peninsula and East Indian Railways, the shortest route fixing the rate in each case.

The opening of the Agra-Delhi Chord Railway reduced the distance between Agra and Delhi from 140 miles, which is the distance by the East Indian Railway *viâ* Tundla, to 120 miles. But by the orders of the Secretary of State the East Indian Railway were allowed to recognise their distance, for purposes of railway rates and fares between Agra and Delhi, the same as by the Agra-Delhi Chord Railway, and equal rates between Agra and Delhi were also accepted between the Great Indian Peninsula and East Indian Railways.

In consideration also of the fact that whatever rate the Delhi-Umballa-Kalka Railway allowed on traffic to Calcutta on its length up to Delhi, the same rate was applied *viâ* Delhi to and from Bombay to the Great Indian Peninsula and to the Bombay, Baroda and Central India Railways, it was now agreed that the rates from Delhi and *viâ* to Bombay should be the same by the East Indian Railway route *viâ* Tundla and *viâ* Agra as by the Agra-Delhi Chord Railway route, the Great Indian Penisinla Railway allowing the same rate to the East Indian Railway route at Agra as to the Agra-Delhi Chord Railway route.

Agreement between the G. I. P., M. and S. M. Rys. re rating and routing of traffic to Bombay viâ Poona, viâ Hotgi or viâ Murmagao.

Another important point in dispute settled in Simla in August 1905 was the basis of the rates to the Bombay, Murmagao and Madras ports in respect of traffic to and from the Great Indian Peninsula and the Southern Mahratta Railway stations, intended for direct shipment by the port of Murmagao. It is necessary to mention here that under an agreement come to between the Southern Mahratta and West of India Portuguese Railways, with the concurrence of the Portuguese Government and of the Foreign and India Offices in London, the working of the West of India Portuguese Railway had been taken over by the Southern Mahratta Railway in 1904, and through rates were now in operation between Murmagao and stations on the Southern Marhatta Railway for direct shipment traffic *viâ* that port.

It was agreed between the Great Indian Peninsula, Madras and Southern Mahratta Railways that—

(1) The Southern Mahratta Railway was to abstain from competing for traffic to and from the Great Indian Peninsula Railway stations not only in respect of traffic to and from Bombay *viâ* Poona, *viâ* Hotgi or *viâ* Guntakal, but also in respect of direct shipment traffic, if there be any, *viâ* Murmagao.

(2) That to and from such stations on the Southern Mahratta Railway, which were allotted to the all rail routes *viâ* Poona and *viâ* Hotgi, the Southern Mahratta and West of India Portuguese Railways were not to compete for such traffic by low rates to Murmagao port in order to encourage direct shipment *viâ* that port, but were to charge their ordinary tariff rates.

(3) That in respect of traffic to and from such stations of the Southern Mahratta Railway as were allotted under the 1901 agreement to the Murmagao route, the Great Indian Peninsula Railway were not to charge any other than their ordinary rates to Bombay over their lines.

(4) That in respect of traffic to and from other areas the rates to the respective ports of Bombay, Madras and Murmagao were to be quoted on the following basis :—

(*a*) That the shortest route either to Bombay, Madras or Murmagao to fix the rate between the forwarding stations and the port.

(*b*) That the railway or railways owning the longer route to the port shall be at liberty to quote a mileage rate equal to the rate fixed by the shorter route.

(*c*) The question of the division of such through rates to be a matter for arrangement between the railways forming the route.

This basis of quotation of rates between the port of Bombay and Murmagao was held to apply to traffic to and from stations on the length of the Nizam's Railway between Bezwada and Warangal, and the Southern Mahratta Railway were permitted to quote rates *viâ* Bezwada for these stations to Murmagao in competition with the port of Cocanada. At the time the Madras Railway were not forming part of the Southern Mahratta Railway, the competition was practically between the Madras and Southern Mahratta Railways from Bezwada to Cocanada on the former and Bezwada to Murmagao on the latter, the lead of the Nizam's Guaranteed State Railway being the same whether the traffic went to Murmagao or to Cocanada.

Further reduction in coal rates.

The Government of India and the East Indian Railway had been for some time past considering the advisability of making a further and liberal reduction in the rates for coal, the object aimed at being to place coal at a cheaper price within the reach of the industries of the various provinces in India, situated at great distances from the coal fields. But this could not be done unless the minimum rate for coal traffic carried for long distances was reduced. Therefore, with effect from the 1st September 1905, the following minimum rates were introduced subject to the undernoted conditions :—

	Per maund per mile.
" For distances up to 300 miles . . .	$\frac{1}{10}$th pie or 0·10
Plus for any distance in excess of 300 miles and up to 500 miles inclusive	$\frac{1}{15}$th pie or 0·066
Plus for any distance in excess of 500 miles . .	$\frac{1}{20}$th pie or 0·05

" *Condition 1.*—That the rate shall be calculated on the through distance between the station of origin and the station of destination of the consignment.

" *Condition 2.*—That when there are two or more routes to destination from the colliery where the traffic originates, the railway or railways forming the longer route may calculate charges on the same mileage as the railway or railways forming the shorter route.

" *Condition 3.*—The coal for the use of foreign railways is to be charged at the same rates and under the same conditions as coal carried for the public.

" *Condition 4.*—That the rates charged are divided between the railways over which the traffic is carried in proportion to the mileage of each, provided that if the distance the coal is carried over any railway is less than 25 miles, the mileage of that railway in dividing the freight shall be reckoned as 25 miles.

" *Condition 5.*—That these rates shall be subject to revision at the end of three years from the 1st of September 1905."

It is to be observed that these rates were minimum rates and were therefore permissive and not obligatory, although it was felt that the railways could at once go down to the minimum rates. Almost simultaneously with the sanction of the minimum rates above referred to for coal the East Indian Railway Board of Directors proposed for introduction on their line the following scale of rates for coal traffic :—

East Indian Railway proposal.

	Per maund per mile Pies.
Up to distances of 75 miles	0·14
Plus for distances 76 to 200 miles	0·12
„ „ 201 to 450 „	0·10
„ „ over 450 „	0·05

Taking the following places (Cawnpore, Agra, Delhi, Nagpur and Bombay), the rates then (in 1905) in force from the Jherria coal fields compared as under with those proposed by the East Indian Railway and the minimum rates sanctioned by the Government :—

Stations.	Existing rates.	East Indian Railway proposal.	Railway Board's proposal.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Cawnpore	7 7 3	7 5 0	5 14 6
Agra	9 6 9	8 7 0	7 0 6
Delhi	10 13 3	9 2 3	7 14 0
Nagpur	9 6 9	8 7 0	7 0 6
Bombay	16 5 0	12 1 6	10 11 0

However, the reduction in rates did not actually come into operation generally over India till about a year later, *viz.*, November 1906, because in the first place, the coal carrying railways, *viz.*, the Bengal Nagpur Railway and the East Indian Railway, which would have to supply wagons for this traffic, were not prepared with the extra rolling stock; and secondly, the East Indian Railway Board of Directors decided that as the opening of the Grand Chord Line in 1906 would affect the distances between the coal districts and all places north and west of Moghalsarai by reduction in the mileage to the extent of 50 miles, it was thought advisable to bring about the reduction on and from the same date as the rates for other commodities were lowered to the extent of the reduction in mileage, along with the lower passenger fares and other goods rates.

Representation by the Bengal Chamber of Commerce to the Ry. Board re rating and routing of jute traffic from East Bengal to Calcutta.

In 1905, the Bengal Chamber of Commerce addressed the Railway Board in connection with the enhancement in the rates for jute from Narainganj to Calcutta. While the Chamber of Commerce accepted that the enhancement in the rates were not in the proportions of the Eastern Bengal State Railway, they deprecated the agreement between the railways and the steamer companies, whereby the rate for first and special class goods were the same by the combined railway and steamer service as those by the steamer service, but the rate for jute was one anna per maund higher by the combined railway and steamer route as compared with the direct steamer route. Their great point was that the railway should not be bound by the rate charged by the steamers, at least in so far as the enhancement in rates were concerned. The view of the Chamber of Commerce also was that owing to the railway rate *viâ* Goalundo to Calcutta being cheaper in through booking with the steamer companies than the rate applicable in local booking from Goalundo to Calcutta, it placed the India General Steam

Navigation and River Steam Navigation Companies in a strong position in competition with other methods of river transport. The amalgamation of the Bengal Central with the Eastern Bengal State Railway was shortly expected, as the Bengal Central Railway was to be acquired by the State, and it was held that the shorter route *viâ* Khulna should now be opened for traffic not only from Chandpur but from Naraianganj as well, and that lower rates should be in force by that route.

The Eastern Bengal State Railway authorities had already pointed out to the Chamber of Commerce, that their railway was dependent on the steamer companies for traffic, and that the proposal of the Chamber of Commerce meant that the railway should incur a large expenditure in providing steamers of their own for the river carriage. This would only end in competition between the railway and the steamers, which must eventually terminate in combination, because division of traffic must be agreed to. Further, the combination of the two steamer companies with such a large fleet at their disposal would mean loss of a large portion of the traffic to the railway, for, if once competition was started between railways and steamers the steamer company would naturally be inclined and would do their best to take the traffic direct to Calcutta. The matter was discussed between the Railway Board and the Chamber of Commerce, and the Railway Board were of opinion, that the railway and the steamer companies were mutually dependent on each other and that it would not be a wise policy for the railway to start keen competition with the steamer companies, but that the Railway Board were prepared to give facilities at Khulna in order to allow Narainganj traffic to go to Calcutta *viâ* Khulna instead of *viâ* Goalundo, and also to make the *viâ* Khulna rates cheaper than those *viâ* Goalundo; and it will be observed from the statement of rates given below, that while the railway rate from Khulna to Calcutta was Rs. 0-3-3 per maund during the busy season, that *viâ* Goalundo was Rs. 0-4-0 per maund (for Narainganj traffic).

Stations.	Busy Season.	Intermediate Season.	Slack Season.	Route.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Sirajganj and Bera	0 4 8	0 4 5	0 3 4	*Viâ* Goalundo.
Jagannathganj and *viâ*	0 4 6	0 4 3	0 3 2	Do.
Narainganj and *viâ*	0 4 0	0 3 9	0 3 10	Do.
Dhallesary and Pudda stations	0 4 0	0 3 9	0 2 10	Do.
Chandpur and *viâ* Narainganj and *viâ* and Pudda stations	0 3 3	0 3 0	0 2 3	*Viâ* Khulna
Madaripur and Bharamganj	0 3 3	0 2 10	0 2 3	Do.

As regards the rates on the Assam Bengal Railway from Chandpur to Chittagong being cheap compared with the rate from Goalundo to Calcutta, it was pointed out that between Naraingganj and Chandpur, the Assam Bengal Railway were forced to quote specially low rates for full pressed jute bales in order to compete with the carriage by brigs, and that but for the low rates the traffic would be lost to them entirely, and that, therefore, the conditions of the Assam Bengal Railway should not be compared with those of the Eastern Bengal State Railway.

Opening of the R. M. Ry. Rewari-Phulera chord.

The opening of the Rewari-Phulera Chord in May 1905 reduced the distances between Bombay and Delhi, and Bombay and Rewari by 40 miles, and the Bombay, Baroda and Central India Railway rates between all stations south and west of Phulera and stations north and east of Rewari, were reduced in proportion to the shortening of the distance.

1906.

In the beginning of the year 1906, the Karachi Chamber of Commerce raised the question of control of rates over the Rajputana-Malwa Railway in the interests of the Karachi port, in view of the fact that the districts served by the northern section of the Rajputana-Malwa Railway were nearer to the sea board at Karachi than Bombay. The Karachi Chamber of Commerce laid special stress on the fact that at the Conference of the Karachi Chamber with late Mr. T. Robertson held at Karachi on 22nd March 1902, the special Railway Commissioner had suggested that a meeting of the interested railways, *viz.*, North Western, Bombay, Baroda and Central India and Jodhpur-Bikanir Railways, should be held for the purposes of dividing the competitive field into three zones, *viz.*, one for North Western Railway and Karachi port, the other for Bombay, Baroda and Central India Railway and the Bombay Port, and the third the competitive zone for both; but this meeting was never held.

The Government of India however gave the Karachi port an assurance in 1906, that a provision would be made in the contract of the newly constituted Bombay, Baroda and Central India Railway for the protection of the interests of the Karachi port, and the following provision was made in the new contract :—

"The Railway Board may at any time require the company to quote over the railways comprised in the undertaking such rates in respect of the conveyance of passengers and goods to and from western ports lying between Karachi and Bombay, inclusive, as may be necessary in the opinion of the Board to secure the carriage of trade to and from such ports on equal terms, and under this power the Board may require the quotation of a rate from stations of consignment to destination :—

(1) Where the route is entirely over the undertaking;

(2) Where the route is only partly over the undertaking."

This provision is still in force.

For sometime past, the Government of India had been considering the question of revising the rates for the transport of troops and their

Military traffic rates.

baggage by railway, the object being to introduce vehicle rates instead of maund rates and to fix an average which would cost the military department no more and would at the same time ensure the railway against the loss. It was recognised that in the case of emergency, if it were necessary to despatch large number of trains from one station, the amount of check, under the system of charging maund rates, which then prevailed, requiring weighment of goods and wagons, would be excessive, resulting either in the trains being detained or in the check being abandoned. Vehicle rates were therefore considered advisable. The railways were addressed in the matter and it was pointed out to them that the primary object of the introduction of the vehicle rate was to obtain simplification, and after a great deal of correspondence vehicle rates were introduced two years later.

Ludhiana-Dhuri-Jakhal Railway.

The opening of the Ludhiana-Dhuri-Jakhal Railway reduced the distance between Ludhiana and Delhi by the North Western Railway route as compared with the distance by the Ghaziabad route. There was not now much difference in the distances between Ludhiana and Delhi by the Amballa route *viâ* the North Western Railway and Delhi-Umballa-Kalka Railway and those between the same points by the Dhuri-Jakhal Railway. The distances compare as follows :—

	Miles.
Ludhiana to Amballa Cantonment (North Western Railway) .	71
Ambala Cantonment to Delhi (Delhi-Umballa-Kalka Railway)	123
TOTAL .	194
Ludhiana to Jakhal	80
Jakhal to Delhi	124
TOTAL .	204

Under the circumstances, the North Western Railway asked for the revision of the agreement in regard to the routing of traffic from stations north of Amballa and north of Dhuri to Delhi and *viâ* and *vice versâ*, and the following revised agreement was come to in March 1906 between the East Indian and the North Western Railways for traffic between Umballa Cantonment and above on the North Western Railway and Delhi and *viâ* Delhi :—

(*a*) Between Sanahwal and below and Delhi and *viâ* and between stations on the Rajpura branch up to and including Nabha, and Delhi and *viâ*.

Rates to be in favour of the Delhi-Umballa-Kalka Railway route, and traffic to be booked accordingly.

(*b*) Between stations Ludhiana and above Chintanwala and beyond and Delhi and *viâ*.

Rates to be equal by the two routes, and the East Indian Railway shall despatch upward traffic from Delhi to stations Ludhiana and above and Chintanwala and beyond, by way of the North Western Railway.

Reduction in coal rates.

As already observed, the revised minimum rates on a low basis for coal rates were sanctioned by the Government in August 1905, but the actual rates for the carriage of coal were fixed on the following scale and were introduced in November 1906* :—

Consignments in full wagon loads.

	Per maund per mile. Pies.
For all distances up to 75 miles inclusive	0·14
Plus for any distance in excess of 75 miles and up to 200 miles inclusive	0·12
Plus for any distance in excess of 200 miles and up to 500 miles	0·06
Plus for any distance in excess of 500 miles . . .	0·05

The East Indian, Bengal Nagpur, North Western, Oudh and Rohilkhand, Eastern Bengal State, Bombay, Baroda and Central India, and Great Indian Peninsula Railways introduced this scale simultaneously. Under this scale the rates per ton from Jherriah were as follows :—

	Rs.	A.	P.
Cawnpore	6	10	0
Agra	7	3	0
Delhi	7	15	0

The rate to Bombay was, however, a special rate. It was calculated on the minimum scale on the distance *viâ* Nagpur, sanctioned by the Government, *plus* 8 annas per ton extra to the Great Indian Peninsula Railway on account of expensive ghaut working.

The Railway Board's Circular laid down without any restriction that for purposes of calculating freight on coal the distances by the longer route or routes might be considered the same as by the shortest route, the intention apparently being that the question of equalization of freight by different routes would be settled between the railways concerned. In considering any such equalisation of rates the main point for consideration was how it was to be effected, and, therefore, the arrangement of grouping of stations of both railways in the Jherria coal field had to be accepted, and in the matter of routing, special agreements already existing between railways had also to be taken into account.

Grierson in his book "Railway Rates—English and Foreign" defines "grouping" as the name of the arrangement by which collieries or works within a given area are charged equal rates and are thus enabled to compete on equal terms.

The given area in this case was the Jherria field. The reason why grouping was confined to the Jherria field alone was that whereas in the Jherria field, the Bengal Nagpur Railway came in with an independent and direct access irrespective of the East Indian, from the colliery to destination, and the collieries were more or less close to one another, the same conditions did not apply either in the case of the Raniganj, Sanctoria or the Giridih coal fields.

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* See also Chapter XII (pages 371 to 373).

The principle on which the equalization was effected was as follows :—

(1) The distances from the despatching collieries to destination by the shortest route were ascertained and then the longer route equalised with it, *e.g.*, the rate from the Jherria field to Bhusaval was calculated on the actual distance from Bhaga to Nagpur, over the Bengal Nagpur Railway and from Nagpur to Bhusaval over the Great Indian Peninsula and the longer route over the East Indian Railway and the Great Indian Peninsula *viâ* Jubbulpore was allowed to quote the same rate from Jherria to Bhusaval.

Broadly speaking, the rates for stations for which the Bengal Nagpur Railway offered the shortest route were fixed on the distance from Bhaga, and the rates for which the East Indian Railway offered the shortest route were fixed for the distance from Jherria.

The Bengal Nagpur Railway route offered the shortest distance between the following places and the Jherria field :—

(1) Nagpur to Bhusaval and west of Bhusaval ;
(2) all Southern Mahratta Railway stations (*viâ* Nagpur and Hotgi and *viâ* Nagpur and Poona) ;
(3) all Madras Railway stations (*viâ* Waltair and Cuttack, and also *viâ* Nagpur and Raichur).
(4) South Indian Railway stations.
(5) Nizam's Guaranteed State Railway *viâ* Nagpur and Manmad for Hyderabad-Godavari Valley Section ; and Wadi to Secunderabad *viâ* Wadi ; and *viâ* Waltair and Bezwada for the length Secunderabad to Bezwada.

And the rates for the following stations were calculated by the East Indian Railway route, that being the shortest.

For Oudh and Rohilkhund Railway—shortest route, *viâ* East Indian Railway and Moghalsarai.
For North Western Railway, Southern Punjab Section Delhi to Samasata and beyond,—shortest route *viâ* Delhi.
For places Umballa and North and West thereof—Rates calculated on the actual distance *viâ* Moghalsarai and Saharanpur, but applied *viâ* Umballa.
For stations between Ghaziabad and Saharanpur—Rates calculated and fixed on the distance *viâ* Ghaziabad.
For Saharanpur, Meerut and stations between Amballa and Saharanpur—Rates calculated on distance *viâ* Moghalsarai but quoted *viâ* Ghaziabad.

For Karachi—The rate fixed *viâ* Agra, Kuchman Road and Hyderabad Sind without transhipment charge, but quoted *viâ* Delhi and broad gauge.

For Bengal and North-Western Railway stations—Rates quoted *viâ* Mokamehghat and also *viâ* Moghalsarai and Benares Cantonment, the latter route being used when it was the cheapest.

(In some cases, even when the distance *viâ* Mokameh was shorter, the rate *viâ* Moghalsarai and Benares Cantonment became cheaper owing to there being a transhipment charge of Rs. 0-6-10 only at Benares Cantonment, whereas *viâ* Mokameh the transhipment and ferry charge together amounted to Rs. 1-2-3.)

For Eastern Bengal State Railway stations—Rates quoted *viâ* Naihati and *viâ* Maniharighat, on the principle of the shortest route fixing the rate.

For stations on the broad gauge—*viâ* Naihati.

For stations on the metre gauge north of Sara *viâ* Maniharighat (except that for stations Sara to Santahar)—equal rates were quoted *viâ* Naihati and *viâ* Manniharighat.

The question that, however, yet remained to be settled was the fixing of the limit beyond which the longer routes should cease to equalise with the rates obtainable by the shortest route. A general understanding was, however, come to between the East Indian Railway and the Bengal Nagpur Railway in connection with the coal traffic to up country stations, that each railway would invoice traffic from the collieries situated on its system by the route most suitable to the railway on which the traffic originated. Taking Delhi, Agra and Cawnpore, the distances by the East Indian route and by the Bengal Nagpur, and Great Indian Peninsula Railway *viâ* Katni-Marwara and Jhansi compared as follows :—

——	1 *Viâ* East Indian Railway direct.	2 *Viâ* Bengal Nagpur and Great Indian Peninsula Railways. *Viâ* Katni-Marwara and Jhansi.	Route 2 longer by— Per cent.
	Miles.	Miles.	
Delhi . . .	740	1,084	46
Agra . . .	626	965	54
Cawnpore . .	469	966	106

The rate to Delhi was Re. 0-4-8 per maund by the shortest route, and this quotation, when applied *viâ* the longer route, worked out to ·0517 pie per maund per mile; in the case of Agra to ·0518 pie per maund per mile, and for Cawnpore to ·0436 pie per maund per mile.

The distances to Amraoti were—

From Jherria, *viâ* Jubbulpore. Miles.	Bhaga, *viâ* Nagpur. Miles.	Jubbulpore or East Indian Railway route.
1,051	743	42 per cent longer.

If the East Indian and Great Indian Peninsula Railways attempted to equalise *viâ* Jubbulpore with the rate *viâ* Nagpur, the rate per maund per mile would be ·0533 pie, but this was not done, nor did the Bengal Nagpur Railway and the Great Indian Peninsula Railway equalise the rates for Cawnpore *viâ* Katni-Marwara, although it was first claimed by the Bengal Nagpur and Great Indian Peninsula Railways that they should have a share of the Cawnpore traffic *viâ* Katni Marwara and Jhansi.

In Simla, where the representatives of the Railways were present, during the sitting of the Railway conference, the following routing of coal was agreed to in August 1906.

I. In regard to despatches from collieries on the East Indian Railway :—

(*a*) Coal for stations on the Indian Midland Section of the Great Indian Peninsula Railway main line north of Bina, and stations on the Agra-Delhi Chord to be booked *viâ* Manikpur.

(*b*) Coal for Bina and stations south, and *viâ*, including the Baran Branch, to be booked *viâ* Katni.

(*c*) The East Indian Railway were allowed to book coal for stations on the Great Indian Peninsula Railway, Indian Midland Section, between Hamirpur to Orai inclusive, *viâ* Cawnpore.

II. As regards traffic originating at collieries on the Bengal Nagpur Railway, it was agreed that the routing should be as follows :—

All coal from Bengal Nagpur Railway collieries, if consigned *viâ* Katni, to be booked onward by the Bengal-Nagpur Railway by way of the Great Indian Peninsula Railway route *viâ* Katni-Marwara, irrespective of destination whether on the Great Indian Peninsula Railway or beyond, except for East Indian Railway stations (including Manikpur) and also stations Jubbulpore to Sohagpur inclusive, on the Great Indian Peninsula Railway, which was booked *viâ* the East Indian Railway from Katni.

R. & K. Ry and extensions.

In 1906, the Rohilkhund and Kumaon Railway was purchased by the Government and a fresh agreement was executed by the Secretary of State with the Company for the working of the Kasganj-Soron Branch of the Rajputana-Malwa Railway and for the acquisition of the Powayan Steam Tramway Company. The Rohilkhund and Kumaon Railway had already extended its line from Bareilly to Soron and its connection with the Kasganj-Soron Branch of the Rajputana-Malwa Railway, now transferred to the Rohilkhund and Kumaon Railway, gave the metre gauge a direct communication from Bareilly and north thereof to Rajputana and the West, and the following traffic which was hitherto carried *viâ* Aligarh and Hathras was lost to the Oudh and Rohilkhund and East Indian Railways.

(*a*) Traffic in Sambhar Salt to Bareilly and to stations on the Rohilkhund and Kumaon Railway and to stations on the Oudh and Rohilkhund Railway on the Bareilly-Chandausi, Bareilly-Rampur, and Bareilly-Shahjahanpur sections.

(*b*) Traffic in grain from the Rohilkhund and Kumaon Railway on their Bareilly-Pilibhit and Pilibhit-Kheri sections to Bombay, as well as traffic in sugar and jaggree from the Bareilly district to R. M. R., but the combined broad and narrow gauge *viâ* Hathras yet remains the shortest between the following points as compared with all through metre gauge route :—

		Miles.	Miles.
1.	(*a*) Hathras to Rewari (all metre gauge route Rajputana-Malwa Railway)	196	
	(*b*) Hathras to Delhi (broad gauge route East Indian Railway)	97	149
	Delhi to Rewari (metre gauge route Rajputana-Malwa Railway)	52	
2.	(*a*) Hathras to Delhi (broad gauge route East Indian Railway)	97	
	(*b*) Hathras to Delhi (metre gauge route Rajputana Malwa Railway)	248	
3.	(*a*) Hathras to Agra (broad gauge route East Indian Railway)	43	
	(*b*) Hathras to Agra (metre gauge route Rajputana-Malwa Railway)	70	
4.	(*a*) Kasganj to Agra		
	Rajputana Malwa Railway (metre gauge) Kasganj to Hathras	34	77
	East Indian Railway (broad gauge) Hathras to Agra	43	
	(*b*) Kasganj to Agra (all metre gauge route Rajputana Malwa Railway)	103	
5.	(*a*) Kasganj to Delhi (all metre gauge route Rajputana-Malwa Railway)	282	
	(*b*) Kasganj to Hathras (metre gauge Rajputana-Malwa Railway) and	34	131
	Hathras to Delhi broad gauge (East Indian Railway)	97	
6.	(*a*) Kasganj to Rewari (all metre gauge Rajputana-Malwa Railway)	230	
	(*b*) Kasganj to Hathras R.-M. Ry. (metre)	34	183
	Hathras to Delhi E. I. Ry. (broad)	97	
	Delhi to Rewari R.-M. Ry. (metre)	52	

An agreement was come to between the Rohilkhund and Kumaon and the Oudh and Rohilkhund Railways to settle the routing of traffic 190 on the opening of the Bareilly Soron Branch and the following was arranged :—

(1) Traffic between stations on the Bareilly Kasganj section and
  (*a*) stations on the Bengal and North-Western Railway and connected metre gauge lines beyond, and
  (*b*) stations on the Bombay, Baroda and Central India Railway and connected metre gauge lines beyond
  to be routed as the Rohilkhund and Kumaon Railway might elect.

(2) Traffic between stations on the Bareilly Kasganj section and
  (*a*) stations on the Oudh and Rohilkhund Railway (except Lucknow for goods consigned to or on behalf of the Military Department),
  (*b*) stations below Moghal Sarai on the East Indian Railway and connected broad gauge lines beyond and
  (*c*) stations on the North-Western Railway and Delhi Amballa Kalka Railway
  to be routed *viâ* Bareilly.

(3) Traffic from
  (*a*) stations on the Oudh and Rohilkhund Railway below Lucknow,
  (*b*) stations below Moghal Sarai on the East Indian and connected broad gauge lines beyond,
  (*c*) stations on the broad gauge lines *viâ* Cawnpore, excluding all Bombay, Baroda and Central India Railway broad and metre gauge stations, and
  (*d*) stations *viâ* Allahabad,
  to stations on the Bareilly Kathgodam section
  to be routed *viâ* Bareilly.

(4) Traffic from stations on the Bareilly Kathgodam section to stations mentioned in clause 3 (*a*), (*b*), (*c*) and (*d*) to be routed *viâ* Lucknow.

(5) The following to be considered local stations of the Oudh and Rohilkhund Railway, and all traffic between them to be routed by the Oudh and Rohilkhund Railway route :—
  Cawnpore Junction ; Lucknow Junction ; Shahjahanpur Junction ; and Bareilly Junction.

Bombay-Bareilly Traffic.

(6) Rates for traffic between Bareilly and Bombay to be equal by both the metre and broad gauge routes *viâ* the Rohilkhund and Kumaon and Bombay, Baroda and Central India Railways combined *viâ* Kasganj and the Oudh and Rohilkhund and Great Indian Peninsula Railways *viâ* Cawnpore.

Modification of the Cawnpore-Burhwal metre gauge link running powers agreement.

The Oudh and Rohilkhund Railway authorities were required to provide at their own expense a separate goods shed for the Bengal and North-Western Railway at Cawnpore, and in return for this the Oudh and Rohilkhund Railway asked for some modification in the terms that were granted to the Bengal and North-Western Railway, but they were in the first instance not agreeable to allow any modification.

One of the modifications asked for by the Oudh and Rohilkhund Railway was that the Junction of Jaunpore between Oudh and Rohilkhund Railway and Bengal and North-Western Railway should be treated as a broad gauge station for purposes of traffic between Jaunpore and the East Indian Railway stations west of Moghal Sarai and that the Bengal and North-Western Railway should not carry this traffic. The Oudh and Rohilkhund Railway also claimed that the traffic on the Bengal and North-Western Railway to and from their Doab lines (bounded on the north-east and west by a line to be drawn from Shahganj to Mau and Mau to Ghazipurghat) from and to all broad gauge stations west of Barabanki was to be carried by such routes as the Oudh and Rohilkhund Railway might desire. The authorities in India failing to obtain the consent of the Bengal and North-Western Railway to these terms referred the matter to the Secretary of State who arranged with the Board of Directors of the Bengal and North-Western Railway for the acceptance of these terms.

Rates over the G. I. P. Railway for Delhi-Bombay traffic.

In 1907, the Great Indian Peninsula Railway pointed out that they were unable to carry the traffic from Delhi to Bombay, to which they were entitled under their agreement with the Bombay, Baroda and Central India Railway owing to their distance between Bombay and Delhi being greater than by the Bombay, Baroda and Central India and Rajputana-Malwa Railway routes.

The division of traffic between the two Railways was as follows since May 1905 :—

	Bombay, Baroda and Central India Railway	Great Indian Peninsula Railway.
	Per cent.	Per cent.
Between Bombay and Delhi . .	53	47
Between Bombay and *viâ* Hathras . .	60	40
Between territorial stations (Hathras to Delhi Shahdara) and Bombay	50	50

The point at issue was as under :—

The East Indian Railway, on the opening of the Grand Chord Line in 1907, reduced the rates for gram and seeds from Delhi to Howrah from Re. 0-7-11 to Re. 0-7-6 per maund in order to give Delhi the full advantage of the minimum rate of $\frac{1}{10}$th pie per maund per mile on the reduced distance from 954 to 903 miles. While the Bombay, Baroda and Central India and Rajputana-Malwa Railways could maintain a lower rate of Re. 0-7-1 per maund on their distance of 848 miles (*viâ*

Rewari-Phulera Chord and Sabarmati) from Delhi to Bombay the Great Indian Peninsula Railway could only quote a rate of Re. 0-8-0 per maund from Delhi to Bombay on their length of 957 miles *viâ* Agra Delhi Chord, Agra and Itarsi. It was also pointed out by the Great Indian Peninsula that the distance from Hathras to Howrah was 806 miles against the distance to Bombay *viâ* broad gauge over the East Indian Railway, Indian Midland Railway and Great Indian Peninsula *viâ* Agra and Itarsi of 882 miles and 883 miles from Hathras to Bombay by the metre gauge route. The Great Indian Peninsula Railway grievance was that while the Bombay, Baroda and Central India Railway were, on the local distance of 883 miles by a route involving transhipment owing to break of gauge, able to quote rate of Re. 0-7-4 because of the whole distance being under their control, the Great Indian Peninsula, with practically the same distance, in fact with a shorter distance of one mile, and by an unbroken gauge route were unable to quote less than Re. 0-8-11 owing to the charge over the East Indian Railway from Hathras to Agra a distance of 13 miles being Re. 0-1-11 per maund (⅓rd pie per maund per mile *plus* 3 pies short distance charge and 6 pies special terminal) The Great Indian Peninsula Railway asked to be allowed to recognise their distance the same as by the Bombay, Baroda and Central India Railway between Delhi and Bombay to secure equalisation of rates with the Bombay, Baroda and Central India Railway so as to be able to carry their allotted share of traffic from Delhi and *viâ* to Bombay. Neither the Bombay Chamber of Commerce nor the Bombay Government recommended this proposal of the Great Indian Peninsula and the Government of India also did not sanction this.

Cross traffic terminal charge.

It has been recognised for a number of years that except where there is a break of gauge a railway is not properly entitled to charge anything in the way of terminals on cross traffic (*i.e.*, traffic which passes over a railway without either originating or terminating on it). In the case, however, of cross traffic passing a junction involving transhipment owing to break of gauge a charge equal to the mileage rate for three miles was considered reasonable. But the East Indian Railway had for a number of years maintained a charge of 3 pies per maund on cross traffic from say *viâ* Aligarh to *viâ* Hathras, *viz.*, on traffic from the Oudh and Rohilkhand Railway to the Rajputana-Malwa Railway (metre gauge). In 1906, the East Indian Railway imposed a cross traffic charge of 3 pies per maund between the following junctions :—between *viâ* Hathras and *viâ* Aligarh ; *viâ* Hathras and *viâ* Agra ; *viâ* Agra, Bombay, Baroda and Central India and *viâ* Aligarh ; *viâ* Ghaziabad and *viâ* Delhi, for the Bombay, Baroda and Central India metre gauge line.

The Oudh and Rohilkhand Railway had previous to 1906 also levied a similar charge on cross traffic passing the junctions of the Oudh and Rohilkhund Railway involving a break of gauge. Therefore the right of East Indian Railway to levy this cross traffic charge of 3 pies was recognised; but it appears from the East Indian Railway *viâ* Delhi-Shahdara junction rate list that their rates for traffic from *viâ* Delhi-Shahdara (the junction between the East Indian Railway and Shahdara Saharanpur light railway on 2′-6″ gauge) and *viâ* Delhi, Southern Punjab (5′-6″ gauge) Railway include a higher cross traffic charge than 3 pies. For instance, the 1st class rate between *viâ* Delhi-Shahdara and *viâ* Delhi, Southern Punjab Railway is 9 pies, the actual distance between Delhi-Shahdara and *viâ* Delhi is 4 miles but the chargeable distance on goods traffic is 10 miles and at ⅓rd pie per maund per mile *plus* 3 pies cross traffic charge the total would be 6 pies and not 9 pies. If the East Indian Railway have to supply wagons for this traffic the charge would not be very unreasonable, considering the very short lead for which the traffic was carried, but the arrangement was that the Southern Punjab Railway were to supply wagons for this traffic over the length Shahdara to Delhi.

Agreement between the late B.-G.-J.-P. Railway and the Morvi Railway for traffic between Jetalsar and Wadhwan.

In July 1907, an agreement was come to between the late Bhavnagar-Gondal-Junagad-Porbandar State Railway and the Morvi Railway, whereby (1) all traffic to and from Jetalsar Junction and stations north of Jetalsar to and from Wadhwan and *viâ* was allotted to the Jetalsar Rajkot Branch and the Morvi Railway and (2) all traffic south of Jetalsar namely to and from Jetalsar-Porbandar and Jetalsar Veraval branches to Wadhwan and *viâ* was made over to the Bhavnagar-Gondal-Junagad-Porbandar Railway *viâ* the Dhola route.

The distances between Jetalsar and Wadhwan compared as follows :—

1	Wadhwan to Dhola .	73	by the late Bhavnagar Gondal-Junagad Porbandar Railway.
	Dhola to Jetalsar . .	80	
	TOTAL .	153	

		Miles
2	Wadhwan to Rajkot over Morvi Railway	74
	Rajkot to Jetalsar (branch of late Bhavnagar-Gondal-Junagad-Porbandar Railway)	46
	TOTAL .	120

This agreement was come to after a period of severe competition between the Bhavnagar-Gondal-Junagad-Porbandar system and the Morvi Railway, lasting for a very long period, and it will be useful and interesting to give a brief resumé of the circumstances that led to the competition.

The old Bhavnagar-Gondal-Porbandar State Railway was owned by the several Kathiawar States, but was worked as one system under a Coalition Board till August 1911, whereas the Morvi Railway was worked as an independent undertaking from its start.

The late Bhavnagar-Gondal-Junagad-Porbandar Railway consisted of the following lines and branches :—

Main lines.

	Miles.	
1. Bhavnagar to Dhola and Dhola to Wadhwan in the north, and Dhola to Dhasa in the south (owned by the Bhavnagar State).	120	Opened for traffic in 1880.
2. Dhasa to Porbandar (owned by Gondal and Porbandar States).	140	Opened for traffic in 1881 and in 1889.
3. Jetalsar to Veraval (owned by the Junagad State)	69	Opened for traffic in 1890.

Branches.

4. Jetalsar to Rajkot (owned by Gondal, Junagad, Jetpur and Rajkot States).	49	Opened for traffic in 1893.
5. Rajkot to Jamnagar (owned by the Jamnagar State).	54	Opened for traffic in 1897.
6. Wadhwan junction to Dhangadra (owned by Dhangadha State).	20	Opened in 1898.

All these lines are metre gauge lines and so is the Morvi Railway from Wadhwan to Rajkot 74 miles, but originally this latter line was a 2′ 6″ gauge line built in 1887. It may be noted that except for its junction with the Bhavnagar Railway and the Bombay, Baroda and Central India Railway at Wadhwan, the Morvi Railway, till 1897, did not connect with the Kathiawar Railways at any other junction. But the construction of the Jetalsar Rajkot Railway in 1897 and the conversion of the Morvi Railway from 2′ 6″ gauge into metre gauge in 1905 gave this line the opportunity to compete for traffic between Wadhwan and *viâ* and Rajkot and south and south-west thereof.

The Morvi Railway and the late Bhavnagar-Gondal-Junagad-Porbandar Railway system carried on competition till 1907 when they came to an agreement. But while during the greater part of the period of competition, all the members of the Coalition Board (which consisted of the representatives of each State, the Manager of the Railway and the Agent to the Governor in Kathiawar) supported the policy of competition, in 1907, the new member for Junagad (as an interested party in the Jetalsar Rajkot Railway) challenged the policy of competition carried out by the Coalition Board and put in a claim for loss caused by the competition. This and various other reasons led to the abolition of Coalition Board and to the Railways being worked as separate and independent lines by staff employed by each Native State with effect from August 1911.

Rearrangement of Railways in Southern India.

In 1908, as an outcome of the negotiations which followed the termination of the contracts of the Madras and Southern Maharatta Railways, the following arrangements were decided on in respect of the railway systems of the Southern India. The Southern Maharatta Railway absorbed the whole of the Madras Railway system with the exception of the Jalarpet-Mangalore section and branches thereof and also the Katpadi-Dharmavaram and Pakala-Gudur sections were taken over from the South Indian Railway, and made over to the Southern Maharatta Railway, and the newly formed system was known as Madras and Southern Maharatta Railway. The South Indian Railway acquired the Jalarpet-Mangalore section of the original Madras Railway and were also given running powers over the Jalarpet-Bangalore section and the powers of the South Indian Railway in the matter of quotation of rates between their broad gauge system (*viz.*, from Jalarpet to Mangalore) and the Madras Bangalore section of the new Madras and Southern Maharatta Railways were defined as follows :—

"The South Indian Railway Company, Limited, shall have power to quote through rates and fares for goods and passenger traffic from any station on the Jalarpet-Mangalore section to any station of the Madras Bangalore section, but not in the reverse direction. Such rates and fares, so quoted shall be divided between the Company and the South Indian Railway Company, Limited, in mileage proportion without any deduction for terminals and other special charges, except that in the case of traffic to and from the Nilgiri line the mileage over that railway shall be reckoned at twice its actual mileage in the mileage division of such rates and fares."

The Madras Chamber of Commerce apprehended that the South Indian Railway might divert traffic from the Jalarpet-Podanur section to other ports than Madras to the detriment of the interests of the Madras port and had asked that some measures be adopted for the protection of the Madras trade, which perhaps was supposed to be met by the provision of the following clause which appears in the South Indian Railway contract of 1910 :—

"No undue or unreasonable preference or advantage to or in favour of any particular person, company, or railway administration, or any particular description of traffic in any respect whatsoever, shall be made or given by the company, nor shall any particular person, company or railway administration be subjected by the company to any undue or unreasonable prejudice or disadvantage in any respect whatsoever. The Secretary of State shall have absolute power for the purposes of this section to decide whether any preference, advantage, prejudice or disadvantage is undue or unreasonable."

Entrance of the E. I. Railway into Hapur and agreement between the E. I. and the O. and R. Railways.

In the beginning of 1908, the Railway Board received and sanctioned the agreement relating to the routing, rating and division of traffic to and from Hapur as the result of the entrance of the East Indian Railway into Hapur by a branch line from Khurja. The circumstances leading up to the terms of the agreement were as under :—

When the Khurja Hapur extension was about to be completed, the Oudh and Rohilkhund Railway claimed that all traffic between Hapur and Calcutta should be routed *viâ* Moghal Sarai. The contention of the Oudh and Rohilkhund Railway was that Hapur had been an Oudh and Rohilkhund Railway station long before the East Indian Railway had gained admittance there, and in the same way as even after the Oudh and Rohilkhund Railway was allowed an entrance into the East Indian Railway stations of Allahabad, Cawnpore, Aligarh and Delhi the traffic between these stations and the East Indian Railway stations east of Moghal Sarai was continued to be treated as local traffic to the East Indian Railway. Moreover, the Oudh and Rohilkhund Railway contended that *viâ* Moghal Sarai was the shortest route for Hapur in respect of Calcutta traffic.

The contentions of the East Indian Railway were that Hapur was as much an Oudh and Rohilkhund Railway station as it became a station of the East Indian Railway, that the Conference Rules provided that any railway having direct command of the route from the sending station to the receiving station should carry the traffic and that the Oudh and Rohilkhund Railway could have objected to the embodiment of this rule had they wished to act contrary to it. The traffic between Moghal Sarai and Hapur could only be treated as both the Oudh and Rohilkhund Railway and the East Indian Railway local traffic. Similarly this was applicable to other junctions. In order to form an amicable settlement the following arrangements and division were arrived at between the two railways :—

(1) Half and half of all traffic between Hapur and Calcutta to each railway.

(2) 75 per cent. of the traffic was allotted to the East Indian Railway, and 25 per cent. to the Oudh and Rohilkhund between stations Cawnpore and Hapur and between Allahabad and Hapur. This division was agreed to as the distances over the East Indian Railway between the above points were much in their favour.

(3) As to the routing of traffic between Hapur and Delhi, Hapur and Ghaziabad, Hapur and Aligarh it was agreed that the shortest route should carry the traffic, *viz.*, the Oudh and Rohilkhund Railway.

(4) As regards the internal stations between Hapur and Oudh and Rohilkhund Railway stations other than the junctions with the East Indian Railway and between Hapur and the East Indian Railway stations other than the junctions with Oudh and Rohilkhund Railway stations each railway to carry its own local traffic.

Any railway carrying in excess of its allotted share between Hapur and Calcutta and between Hapur and Allahabad and between Hapur and Cawnpore was to retain 50 per cent. of the excess receipts on account of working expenses and make over the remaining 50 per cent. to the railway carrying less than its proper share.

Sara or Lower Ganges Bridge Committee's report.

The Committee appointed to consider the site of the Sara Bridge was also asked to report on the following points :—

(1) The erection of a bridge at Sara to link up the metre and broad gauge sections of the Eastern Bengal State Railway.

(2) The provision of a bridge at Godagari to more distinctly serve the interests of the Bengal and North-Western Railway.

(3) A scheme suggested by the Railway Board for the construction of a bridge at Rampur Boalia, connected by short links with the Ranaghat-Katihar and Eastern Bengal State Railways and with Calcutta by a new metre gauge line *viâ* Meherpur and Ranaghat.

(4) The project which the Committee recommended as offering the best settlement of the complex question of the location of a bridge over the lower Ganges.

The conclusions arrived at by the Committee were as follows :—

> The metre gauge ought not to be extended south of the Ganges and the bridge should be built near Sara.

The only reason for introduction of and a reference to the report of the Ganges Bridge Committee in this Monograph is with a view to state briefly the deliberations and recommendations of the Committee in connection with the facilities that were considered, in their opinion, reasonable and which they recommended should be given in the matter of rating and routing of traffic from the Bengal and North-Western Railway to Calcutta ; they were as follows in the words of the Committee :—

"The true cause would seem to be a natural and not altogether unreasonable attempt to secure as long a lead as possible over the home line for its Calcutta traffic. This object will be obviously best attained by the exchanging station with the foreign railway being at an end, and not near the centre of the system. If this explanation be correct, the insistance of the Bengal and North-Western Railway on the Katihar instead of the Mokameh route, and the value placed on the shortening of their former connection, is not difficult to understand. A similar policy is adopted by practically every railway in India, specially in connection with its outward traffic, and unless carried to extremes cannot be considered unreasonable. Unfortunately, in their endeavours to secure longer leads, the administration of the Bengal and North-Western Railway do not err on the side of moderation ; and though we have every sympathy with efforts directed to a fair distribution of the Calcutta traffic between the two routes, we cannot view as reasonable the attempt made to secure the whole at a heavy loss to Government and a substantial sacrifice of public interests This opinion would seem also to be shared by the Railway Board, as during the course of our investigations they authoritatively stated that the whole of the railway giving access to Calcutta from the Bengal and North-Western Railway *viâ* Katihar is to be owned and worked as a State Railway. As this decision will doubtless lead to a considerable modification of the concessions indicated by the Board of Directors and the Agent of the Bengal and North-Western Railway, no useful object is served by discussing them, and our remarks will, therefore, be confined to a consideration of the conditions necessary to give that system reasonable access to Calcutta. The distances for charge between Barauni and Mokameh and between Barauni and Katihar are 27 and 112 miles respectively, so that the *viâ* Katihar route gives the Bengal and North-Western Railway an extra lead of 85 miles. Assuming an annual traffic of 600,000 tons carried at an average rate of ⅕th pie per maund per mile, and a fair charge for haulage the profit to be obtained by carriage under competitive conditions at ⅒th pie per maund per mile over this additional distance may be placed at 3¼ lakhs of rupees per annum, an amount which would be realised by the gross receipts of the same volume of traffic carried 19 miles at a profit of ⅕th pie per maund per mile. In other words, the Bengal and North-Western Railway would lose nothing by abstaining from competition in return for the gross receipts of 19 miles of the East Indian Railway portion of the Mokameh route. Under actual conditions, many cases would arise where the Bengal and North-Western Railway would not have to go down to ⅒th pie per maund per mile on the Katihar route, and also considering the loss they can cause the East Indian Railway, it is questional whether they would be satisfied with the bare compensation. Under these circumstances, an allowance of the receipts of 19 miles would be insufficient, but if the length be increased to 30 miles, the Bengal and North-Western Railway would receive liberal compensation for the routing of their traffic *viâ* Mokameh. The Manager, Eastern Bengal State Railway, estimated in 1906 that, neglecting the set off of the Government share of the profits of the Bengal and North-Western Railway, the loss to the State by diversion of that Railway's traffic *viâ* Katihar would be Rs. 3-1-2 per ton, if an average rate of ⅕th pie per maund per mile were assumed. On the basis of 600,000 tons of traffic this loss would approximately amount to Rs. 18,50,000 per annum, so that, even if the State absorbed the whole profits of Rs. 3,50,000 for which the Bengal and North-Western Railway are struggling, a loss of Rs. 15,00,000 would be incurred by the diversion of traffic in question from the shortest route *viâ* Mokameh. It is, therefore, utterly opposed to the interests of the Government that the Katihar route should be encouraged to compete with the shorter one *viâ* Mokameh. With this fact in view, and also to avoid interference with the existing rights of the latter route to reduce rates and fares to the sanctioned limits, we are of opinion that the total charges by the longer should exceed those of the shorter route by at least the "competitive difference." Subject to these restrictions the Bengal and North-Western Railway might be allowed running powers between Katihar and the transhipment station near Nattore with the right to quote such rates and fares over the Nattore Calcutta section as would not affect the local rates and fares of the State line, and unprejudiced treatment at the transhipment station. As regards the question of rates and fares, the restriction of this power to traffic passing between Bengal and North-Western Railway stations and stations on the Eastern Bengal State Railway between Naihati and Southern termini would appear to meet requirements. Independent control of the transhipping station is not absolutely necessary, but if it can be arranged without compromising State interests, might be introduced in deference to the known views of the Bengal and North-Western Railway. One method of affecting this concession consists in controlling the goods transhipment station by a joint committee, composed of representatives of the two railways concerned and of the Port Trust railway, the discipline and appointment of staff being vested in the last named authority. The foregoing proposals may be summarised as under :

(1) Both routes to be available to the public

(2) On all traffic from the Bengal and North-Western Railway stations *viâ* Mokameh to Calcutta, that railway to be credited with 30 miles of the East Indian Railway portion of the route in addition to its own lead.

(3) Rates and fares *viâ* Mokameh and *viâ* Katihar to Calcutta termini to differ by the competitive difference

(4) Subject to above restrictions, the Bengal and North-Western Railway to be allowed to quote through rates between stations on its system, and Naihati to Budge Budge, Diamond Harbour, and Mutla stations on the Eastern Bengal State Railway.

(5) The imposition of blocking charges of every description, designed to upset these proposals, to be generally prohibited.

(6) The Bengal and North-Western Railway to be granted running powers between Katihar and the transhipment station near Nattore.

(7) The goods transhipment station to be worked under impartial management."

1908-1909. Revision of the agreement between the E. I. and the B. N Railways for traffic between Calcutta and Katni.

The opening of the Grand Chord Line reduced the distance between Katni and Howrah by the East Indian Railway route and this necessitated a revision of the agreement of 1901 between the East Indian and Bengal-Nagpur Railways regarding traffic from Katni, Jubbulpore and stations on the Indian Midland Railway section of the Great Indian Peninsula Railway to Calcutta and *vice versâ*. The Bengal-Nagpur Railway agreed to waive their claim for traffic between the following points :

(*a*) All traffic between Calcutta and stations on the Jhansi Agra, Jhansi Cawnpore, and Jhansi Manikpur sections of the Indian Midland Railway. Such traffic was in future to be carried by the Great Indian Peninsula *viâ* Agra, Cawnpore and Manikpur as the case may be.

(*b*) Traffic between Katni and *viâ* and stations on the East Indian Railway between Bally and Asansol (excluding Asansol); the East Indian Railway were to carry this traffic by the local route.

(*c*) Traffic between stations Niwar to Jubbulpore and Asansol to Bally, this traffic being East Indian Railway local traffic the Bengal-Nagpur Railway were not to carry any share of it.

Therefore, the traffic that now came in division between the two railways, for which equal rates were to be quoted by both the East Indian and Bengal-Nagpur Railways was as follows and the undermentioned division of traffic was accepted :—

	Bengal-Nagpur Railway.		East Indian Railway.
Katni and Calcutta and *viâ* Katni and *viâ* and Asansol	$\frac{1}{2}$	and	$\frac{1}{2}$
Viâ Jubbulpore to Calcutta and to Asansol .	$\frac{3}{8}$		$\frac{5}{8}$

The traffic to and from Jubbulpore was not to be divided but equal rates were to be maintained—

(1) by the East Indian Railway direct route to Howrah ;

(2) *viâ* East Indian Railway Katni and the Bengal-Nagpur Railway to Shalimar ;

(3) *viâ* Gondia to and from Howbagh Jubbulpore station on the Bengal-Nagpur Railway to Shalimar.

Burhwal-Sitapur Railway.

The terms relative to the construction by the Bengal and North-Western Railway of a metre gauge chord from Burhwal to Sitapur running parallel to Lucknow-Sitapur (State) Railway (worked by the Rohilkhund and Kumaon Railway) were subject of correspondence and controversy between the Oudh and Rohilkhund and Bengal and North-Western Railways. The Government of India had not only to protect the interests of the Oudh and Rohilkhund Railway but of the Lucknow-Sitapur Railway as well. In the first place, there was a fear of the Bengal and North-Western Railway attracting all the traffic from the Rohilkhund and Kumaon Railway north of Sitapur to the East Indian Railway stations east of Moghal Sarai to their metre gauge route either *viâ* Benares, *viâ* Digha or *viâ* Mokameh to the detriment of the interests of the Oudh and Rohilkhund Railway who were carrying this traffic from Lucknow to Moghalsarai The Bengal and North Western Railway could also compete for traffic from their own railway to the Bombay, Baroda and Central India Railway, by combination with the Rohilkhund and Kumaon Railway *viâ* Sitapur, Bareilly and Kasganj, to the detriment of the interests of the Oudh and Rohilkhund Railway, as proprietors of the metre gauge link from Burhwal to Cawnpore and interested to the extent of 75 per cent. of the gross earnings of this link and also of the Cawnpore Achnera Railway to a certain extent.

The Lucknow-Sitapur Railway was also to lose a portion of its through traffic from the Oudh and Rohilkhund Railway east of Barabanki to stations north of Sitapur.

Therefore, the Bengal and North-Western Railway were asked to accept the following terms :—

"For the protection of the interests of the Oudh and Rohilkhund State Railway and of the Lucknow Bareilly State Railway, now worked by the Rohilkhund and Kumaon Railway Company :—

(*a*) The Oudh and Rohilkhund Railway shall be credited with half the share of the through rates and fares for 197* miles, received by the Company in respect of all traffic carried *viâ* the Burhwal Sitapur Chord from, to, and *viâ* any station or stations on the Rohilkhund and Kumaon Railway (including Sitapur) to, from, and *viâ* any station or stations on the East Indian Railway east of Moghal Sarai.

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* The distance from Lucknow to Moghalsarai.

(*b*) All traffic between stations on the Bengal and North-Western Railway Company's system and the Bombay, Baroda and Central India Railway shall be routed, or shall be deemed to have been routed, *viâ* Cawnpore.

(*c*) The net earnings of the Burhwal Sitapur Chord from through or cross traffic from any source to any destination shall be credited to the Lucknow Bareilly State Railway."

These terms were eventually accepted on the intervention of the Secretary of State.

Rates between the river side stations on the Pudda river and viâ Khulna (E. B. S. Railway).

In 1908, the Railway Board approved of the following basis of division in the matter of rates to and from the river stations on the Pudda river *viâ* Khulna for traffic to and from Calcutta stations :-

"It was agreed that the basis of division *viâ* Khulna, *viz.*, 120 miles to the Steamer Companies and 100 miles to the Railway, should apply to all upward traffic as well as to jute and other downward traffic *viâ* Khulna, and further for all upward and downward traffic booked *viâ* Goalundo to and from Naraianganj and *viâ* Pudda stations and Chandpur and *viâ*, but diverted *viâ* Khulna, the rates *viâ* Goalundo to be charged, and the division of the through rates shall be on the basis of 120 miles to the Steamer Companies and 106 miles to the railway (for Calcutta stations). It was also agreed that the route for upward traffic should follow or be governed by the route of the downward traffic."

1910 Military traffic rates—revision.

The rates for the carriage of military traffic were revised for reasons already stated on the representation of the Military Department with effect from 1st January 1908 as a tentative measure for a period of one year ; they were as follows

(These experimental rates were in operation during 1908 and 1909 and were slightly enhanced in 1910.)

Coaching.	Standard.			Metre and smaller gauges.		
	Rs.	A.	P.	Rs.	A.	P.
Per 4 wheeled vehicle per mile . . .	0	4	6	0	3	0
Per bogie vehicle per mile	0	9	0	0	6	0
Per 6 wheeled vehicle per mile . . .	0	6	9	0	4	0
Goods.						
Per 4 wheeled vehicle per mile . .	0	4	6	0	3	0
Per bogie vehicle per mile	0	9	0	0	6	0
Per 6 wheeled vehicle per mile . .	0	6	9	0	4	0

Previous to the introduction of the above scale the rate for small parties and for troops carried by troop trains were practically the same. Broadly speaking they were as follows :—

British Officers	1st class accommodation, at 2nd class fares
Warrant Officers **Native Officers and Non-Commissioned Officers and men.**	2nd class accommodation at the lowest fares with the exception that Native Non-Commissioned Officers and men on duty singly or in a small parties not exceeding 4 in number to travel 3rd class.
Native troops and followers	3rd class at the lowest fares.

Baggage (Government baggage and personal baggage in excess of that provided for in the warrant) was charged at ·8 pie per maund per mile.

Supply and transport stores at $\frac{1}{2}$ pie per maund per mile but the railways allowed to charge a minimum of $\frac{1}{6}$th pie per maund per mile —generally the $\frac{1}{2}$ pie rate was charged.

Ordinance Stores.—$\frac{3}{8}$ th pie per maund per mile but railways were allowed to reduce to $\frac{1}{6}$th pie at their option. Generally $\frac{3}{8}$th pie per maund per mile was charged.

These rates are now in operation when a full carriage or wagon is not required.

Under the contract with the Secretary of State, the State lines worked by companies, are required to carry military traffic on the same conditions as may for the time being be in force on State worked State lines of same gauge.

Benares-Allahabad passenger traffic.

Both Benares and Allahabad are important places of Hindu pilgrimage and during melas and fairs there is a large traffic in pilgrims between these two places. During Kumbh Mela which occurs every twelve years (the last big Mela held at Allahabad was during January and February 1906) the number of passengers booked from Allahabad to Benares and *vice versâ* is enormous.

Prior to the construction of Allahabad Fyzabad Railway the East Indian Railway enjoyed the monopoly of this traffic. But during the Kumbh Mela of 1906 the alternative route *viâ* Fyzabad was opened. The Oudh and Rohilkhund Railway Phaphamu-Jangai line was opened in 1907 and the distance by the Oudh and Rohilkhund Railway Jangai route and by the East Indian Railway route compared as follows :—

	Miles.
By the Oudh and Rohilkhund Railway route	84
By the East Indian Railway route	105

The East Indian Railway obtained running powers between Moghal Sarai and Benares for their passenger trains and constructed a chord line (called Bechupur Chord) so that the East Indian Railway trains from Benares to Allahabad and *vice versâ* could run in and out of Benares without there being the necessity for such trains to enter the junction of Moghal Sarai.

For a time although the fares were practically equal there was competition for traffic by canvassing on the part of both the East Indian and Oudh and Rohilkhund Railways. The following arrangement was subsequently come to between the two railway administrations :—

> "(1) Passenger fares from Allahabad, Prayag and Naini to Benares Cantonment and Kashi and *vice versâ* shall be equal by both the routes, *viz.*, by the Oudh and Rohilkhund and East Indian Railway routes.
>
> (2) The East Indian Railway shall have running powers between Moghal Sarai and Benares Cantonment for passenger trains to and from Allahabad.
>
> (3) The coaching traffic shall be carried, as far as possible, in equal proportions by the two routes ; but the railway which carries the larger amount shall retain 75 per cent. of the excess receipts, making over 25 per cent. to the other railway.
>
> (4) The East Indian Railway shall pay to the Oudh and Rohilkhund Railway 75 per cent. of the total gross receipts attributable to the mileage proportion between Moghal Sarai and Benares Cantonment on coaching traffic carried in East Indian Railway trains under running powers.
>
> This clause shall remain in force even though the Chord to Bechupur is constructed.
>
> (5) It is noticed that this agreement contravenes the terms of the Moghal Sarai agreement of March 1889, in the matter of routing of traffic between stations referred to in paragraph 1 above. It must be clearly understood that this contravention of the agreement is only applicable to coaching traffic between those stations."

Coal rates.

At a meeting held between the East Indian and Bengal-Nagpur Railways, after the introduction of the revised scale of rates for coal and also subsequent to the routing agreement come to in 1907, the Bengal-Nagpur Railway consented to the withdrawal of equal quotations by their longer alternative routes *viâ* Katni Marwara and Great Indian Peninsula to stations on the Delhi-Ambala-Kalka Railway and to the junction stations between Delhi and Agra such as Hathras, as it was accepted that the equalisation of rates by the longer alternative routes could not be effected without the consent of all the lines concerned and that because the East Indian Railway did not agree to the longer route being followed to its stations (including the Delhi-Ambala-Kalka) the Bengal-Nagpur Railway withdrew the quotations by their longer route from collieries on the Bengal-Nagpur Railway in the Jherria Field.

Entrance of the E. I. Railway into Farrukhabad and agreements for rating, routing and division of traffic

In 1909, an agreement was concluded between the East Indian Railway and the Bombay, Baroda and Central India Railway relating to traffic between the following junction points :—

Cawnpore and Delhi.
Delhi and Hathras.
Farrukhabad and Agra.
Farrukhabad and Delhi.
Cawnpore and Farrukhabad.
Hathras and Farrukhabad.

The entrance of the East Indian Railway into Farrukhabad in 1906 opened the door for competition between the two railways for traffic between the points named above. The distances between these points are as follows :—

	Bombay, Baroda and Central India Railway.	East Indian Railway.
Cawnpore and Delhi	436	271
Delhi and Hathras	248	97
Farrukhabad and Agra	171	102
Farrukhabad and Delhi	350	216
Farrukhabad and Cawnpore . . .	86	187
Farrukhabad and Hathras . . .	102	119

It will be observed that the East Indian Railway all broad gauge is shorter than the Bombay, Baroda and Central India direct all metre gauge routes in the first four cases. It was pointed out by the East Indian Railway to the Bombay, Baroda and Central India Railway that they (the Bombay, Baroda and Central India Railway) should refrain from competition between these points seeing that the East Indian Railway did not compete with them for traffic between Farrukhabad and Cawnpore and Hathras and Farrukhabad for the reason that the metre gauge route was shorter.

The Bombay, Baroda and Central India Railway agreed to accept this position provided that in the case of Delhi-Farrukhabad traffic they were allowed to carry it by the combined broad and metre gauge routes *viâ* Hathras, which was the shortest, but the East Indian Railway observed that the case of Farrukhabad-Delhi traffic was similar to the case of salt traffic from Sambhar to Cawnpore. The East Indian Railway offered the shortest route for traffic in Sambhar salt to Cawnpore *viâ* Agra, but the Bombay, Baroda and Central India Railway retained the traffic to their route on the ground that they offered an unbroken gauge route from starting station to destination under command of one railway, and following the same argument, the East Indian Railway claimed the traffic between Delhi and Farrukhabad for they offered a much shorter unbroken broad gauge route between these two points as compared with the Bombay, Baroda and Central India Railway unbroken metre gauge route. The broken gauge route *viâ* Hathras was, therefore, ignored for this traffic, specially on the ground that the distance by that route was shorter than the East Indian Railway direct route by 8 per cent. only and thus the advantage of the shorter distance was more than counterbalanced by the break of gauge especially as the East Indian Railway could hold their own by the direct broad gauge as compared with either the direct metre gauge or the combined broad and metre gauge route *viâ* Hathras. Ultimately the following agreement was come to between the two lines in February 1909 :—

" It is agreed that the rates between the following points should be in favour of the East Indian Railway direct route :—

(*a*) Cawnpore and Delhi.
(*b*) Delhi and Hathras.
(*c*) Farrukhabad and Agra.
(*d*) Farrukhabad and Delhi.

The rates *viâ* the Bombay, Baroda and Central India Railway to be one anna per maund higher than those over the East Indian Railway direct route.

The arrangement also to apply to traffic *viâ* these junctions except for traffic to and from Bombay, Baroda and Central India Railway local stations. The traffic between the following junctions to be carried by the Bombay, Baroda and Central India Railway route, the East Indian Railway undertaking not to compete for it.

(*a*) Cawnpore and Farrukhabad.
(*b*) Hathras and Farrukhabad. "

Opening of the Ranaghat (Krishnagar) Lalgola-Godagari-Katihar route and agreement between the E. I. and the E. B. S Rys. in consequence thereof.

The opening of the Krishnagar-Lalgola broad gauge line of the Eastern Bengal Railway in 1907 and of their Katihar-Godagari metre gauge extension necessitated a change in the agreement of 1902 relating to the routing and rating of traffic from stations on their Assam Behar Section to Calcutta. The distances between Katihar and Calcutta by the East Indian Railway route *viâ* Manihari and the Eastern Bengal State Railway new route compared as follows :—

	Miles.	Miles.
By Eastern Bengal Railway route *viâ* Godagiri	249	249
Viâ Manihari East Indian Railway.		
Eastern Bengal Railway	23	
East Indian Railway	219	
TOTAL	242	
		242

It was, therefore, accepted that the traffic from all stations, north, south and east of Katihar, for which rates were hitherto equal *viâ* Manihari, should now be routed *viâ* the Eastern Bengal Railway route *viâ* Godagiri and Lalgola so far as traffic to the Calcutta side of the river was concerned, *viz.*, to the following stations :—

Beliaghatta.
Sealdah.
Chitpore.
Port Trust Railway Stations.
Ultadanga and Kidderpore Docks.

But in respect of traffic to Howrah and to jute mills situated between Naihati and Howrah on the East Indian Railway, the traffic from the

following stations on the Eastern-Bengal Railway continued to take the Manihari route :—

Manihari Ghat.
Manihari.
Manshahi.
Forbesganj.
Simraha.
Arariya.
Kusiargaon.
Jalalgarh.
Kasba.
Purneah.
Rautara.
Katihar.
Sonaili.
Salmari.
Barsoi.
Sudhani.
Dalkolha.
Kanki.
Kissengunge
Kachna.

Revision of agreement between the G. I. P. and the B., B. and C. I. Rys. for traffic between Bombay and Northern India on the opening of the N. M. Ry.

The decision of the Government to treat the Nagda-Muttra Railway as an integral part of the Bombay, Baroda and Central India Railway invited the attention of the Great Indian Peninsula Railway and keen competition would have followed the opening of this line had it not been for the agreement that was concluded before the Nagda line was included in the Bombay, Baroda and Central India system. It was thought advisable to come to a settlement with a view to avoid any competition in rates between these two lines, without in any way sacrificing the interests of the public so far as facilities in the matter of the shorter distance *viâ* the new route were concerned. The question was discussed at great length between the Boards of Directors of the two Railways during 1909 and 1910, and it was finally agreed that the goods traffic between Bombay and Delhi, Muttra, Agra and Cawnpore was to be divided equally between the routes of the two companies. It may be mentioned that the Cawnpore traffic was never hitherto, since the opening of the Indian Midland Railway, shared with the Bombay, Baroda and Central India Railway; but in view of a satisfactory agreement being necessary as to what would be reasonable to both the parties it was eventually accepted that Cawnpore and *viâ* Cawnpore traffic should be included in the pool. The distances by the Bombay, Baroda and Central India Railway route *viâ* Sabarmati, Bombay, Baroda and Central India Railway broad gauge route *viâ* Nagda-Muttra, and the Great Indian Peninsula Railway route *viâ* Itarsi compare as follows between Bombay and the following points :—

——	*Viâ* Bombay, Baroda and Central India *viâ* Subarmati Railway.	*Viâ* Nagda-Muttra Railway.	*Viâ* Great Indian Peninsula Railway
Bombay to—	Miles.	Miles.	Miles.
Delhi . . .	848	864	957
Muttra . .	855	775	869
Hathras . .	884	804	883
Agra . . .	847	786	836
Cawnpore . .	1,072	993	839

It will be observed that while the Great Indian Peninsula route offered the shortest distance from Cawnpore to Bombay, the Bombay, Baroda and Central India Railway had the advantage of shorter distances in the case of the other stations by the Nagda-Muttra route, except that in the case of Delhi, the Bombay, Baroda and Central India Railway route *viâ* Sabarmati yet remained the shortest by 16 miles.

It may be pointed out here that the Nagda-Muttra Railway (rather the Bombay, Baroda and Central India Railway) for purposes of direct entrance into Delhi obtained running powers over the Agra-Delhi Chord between Muttra and Delhi, and in respect of this distance the Bombay, Baroda and Central India Railway were required to pay 50 per cent. of the earnings of the Delhi-Bombay goods traffic to the Agra-Delhi Chord Railway which included payment for haulage and for running powers.*

Opening of Sitapur Balamau Railway.

In 1910, on the opening of the Balamau-Sitapur Branch of the Oudh and Rohilkhund Railway, the question of the quotation of rates between Sitapur and Lucknow and Sitapur and Bareilly and of the protection of the interests of the Lucknow-Sitapur-Bareilly metre gauge State Railway, forming part of the Rohilkhund and Kumaon Railway, came up for consideration. The distance between Sitapur and Lucknow by the new broad gauge route was longer, *viz.*, 82 miles against 55 miles, the distance by the metre gauge route of the Rohilkhund and Kumaon Railway over the Lucknow-Sitapur-Bareilly line; but between Sitapur and Bareilly the Oudh and Rohilkhund Railway route became the shortest. One of the new features of the arrangement come to in this connection was that in order to prevent competition and to protect the interests of the Rohilkhund and Kumaon Railway, the Oudh and Rohilkhund Railway as offering the shortest distance between Sitapur and Bareilly of 100 miles, were told to charge maximum rates of the longer distance of the Rohilkhund and Kumaon Railway of 144 miles.

In regard to traffic between Lucknow and Sitapur the Rohilkhund and Kumaon Railway route was the shortest and it was recognised that 50 per cent. of the gross receipts of the Oudh and Rohilkhund Railway on the distance Sitapur to Lucknow in respect of such traffic, which should be carried by the shorter route to and from the metre gauge stations, was to be credited to the Rohilkhund and Kumaon Railway on account of the Lucknow-Sitapur Railway when such traffic was carried by the Oudh and Rohilkhund Railway.

Competition between the M. S. M. and the N. G. S. Rys. for traffic from East Coast to G. I. P. Railway.

In 1910, the Madras Railway so arranged the rates from their East Coast section, for instance from Coconada to stations of the Great Indian Peninsula Railway, as to carry the traffic over the Madras Railway system *viâ* Bezwada, Guntakal and Raichur involving two transhipments, one at Bezwada and another at Guntakal, although the shortest route for such traffic was *viâ* Bezwada and Wadi direct broad gauge route

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* Also see pag 193.

The distances compare as follows to and from Sholapur the point where all the routes meet:—

	Miles.
1. Coconada to Bezwada (Madras and Southern Mahratta broad gauge)	134
Bezwada to Wadi (Nizam's Guaranteed State Railway broad gauge)	338
Wadi to Sholapur (Great Indian Peninsula Railway broad gauge)	93
	565
2. Cocanada to Raichur—Madras and Southern Mahratta Railway (*viâ* Bezwada and Guntakal) broad gauge and metre gauge involving two transhipments one at Bezwada and the other at Guntakal)	488
Raichur to Sholapur (Great Indian Peninsula Railway broad gauge)	160
	648
3. Coconada to Bezwada—Madras and Southern Mahratta (broad gauge)	134
Bezwada to Hotgi—Madras and Southern Mahratta (metre gauge) involving two transhipments one at Bezwada and the other at Hotgi	576
Hotgi to Sholapur—Great Indian Peninsula Railway (broad gauge)	10
	720

The Nizam's Guaranteed State Railway, interested in shortest route *viâ* Wadi, took exception to this position and retaliated by the quotation of high rates from their stations in the direction of Bezwada, the junction with the Madras Railway, as compared with the rates from the same stations on the Nizam's Railway to *viâ* Wadi for the Great Indian Peninsula Railway. For instance, full pressed cotton from Secunderabad to *viâ* Wadi was charged Re. 0-5-2 per maund for the distance of 121 miles, equal to ·512 of a pie per maund per mile, whereas if sent *viâ* Bezwada the rate was Re. 0-10-1 per maund; although the Nizam's Railway obtained a much longer lead in this case, *viz.*, of 218 miles, the charge was at a slightly higher rate, namely, ·555 pie per maund per mile.

At first sight, the proper route for traffic between say Coconada and the Great Indian Peninsula Railway stations would appear to be that *viâ* Bezwada and Wadi, which is not only the shortest route but offers an unbroken broad gauge route. But it has to be considered that the Madras Railway has the entire command of the distance from Coconada to Bezwada and of the distance from Bezwada to Raichur and also from Coconada to Bezwada and Bezwada to Hotgi. It is the recognised practice throughout the Railway world to allow the railway, on which the traffic originates, the longest possible lead so long as it is not to the detriment of the interests of the public. As already stated, the Madras Railway route *viâ* Bezwada, Guntakal and Raichur involves double transhipment, but in the matter of railway rates the Madras Railway, having the command of the entire distance from Coconada to Raichur, and as the Great Indian Peninsula Railway get a longer lead from Raichur than from Wadi, cheap rates are possible by the Bezwada-Guntakal-Raichur route, especially as in the case of the shorter route *viâ* Bezwada and Wadi both the Madras and the Great Indian Peninsula Railways are interested in only short lengths, namely from Coconada to Bezwada and from Wadi to Great Indian Peninsula Railway stations respectively; and they cannot ordinarily charge the same low rates per mile as the Nizam's Railway can from Bezwada to Wadi, which forms the greater part of the shortest route, or the Madras Railway can from Coconada to Raichur on the longer route. The matter was referred to by the Madras Chamber of Commerce to the Government of India and the latter, while holding the action of the Nizam's Railway contrary to section 42 of the Indian Railways Act in charging from Secunderabad higher mileage rates to Bezwada than to Wadi, considered that the Madras Railway were not entirely wrong in routing the traffic of their East Coast stations to the Great Indian Peninsula stations by the route that gave them the longest lead. Whether this view in so far as it related to the routing of the East coast traffic to the Great Indian Peninsula Railway was entirely correct or not is difficult to determine because it is questionable whether a longer route like this, involving two transhipments, should be allowed to route the traffic in this manner unless it is to the interests of the public to do so. Any how, the matter was settled by an agreement between the Railways concerned later on, under which equal rates were quoted *viâ* Bezwada and *viâ* Hotgi over the Madras Railway to those in force *viâ* Wadi, but subsequently the Great Indian Peninsula Railway withdrew from this agreement so far as it related to traffic between East Coast stations and stations beyond Great Indian Peninsula Railway, for instance, the Bombay, Baroda and Central India Railway. In such cases, the Great Indian Peninsula Railway agreed that they would accept mileage division of through rates by any of the routes, namely *viâ* Wadi, *viâ* Hotgi and *viâ* Raichur. It may, however, be stated that with equal rates the broad gauge route *viâ* Bezwada and Wadi was open to the public along with the alternative routes *viâ* Bezwada and *viâ* Hotgi, so that although the arrangement might not have been a satisfactory one to the Nizam's Guaranteed State Railway it was to the advantage of the public, who got three routes open to them at equal rates.

1910-11-12 Rates agreements between the Kathiawar Native State Railways to avoid competition.

We have already referred to the dispute between the late Bhavnagar-Gondal-Junagad-Porbandar State Railway and the Morvi Railway. It seemed that the working of the Native State Railways in Kathiawar as one system under Coalition Board was not considered satisfactory by all concerned, and at the request of the Bombay Government the then President of the Railway Board was invited to go into the whole question with a view to arrive at a satisfactory settlement and eventually independent and separate management of the several railways was arranged. The idea was that each State should manage its own railways, the same as the Morvi State was doing, and this is what was practically arranged except that in the case of very short lengths owned by a State, such as Dhrangadra Railway, or in the case of joint ownership of a small length, the State having a comparatively big system of its own and running as a contiguous railway was given such short lengths to work.

The Bhavnagar Gondal Junagad and Porbandar Railway was split up into four systems namely :—

(1) Bhavnagar State Railway.
(2) Gondal-Porbandar State Railway.
(3) Junagad State Railway.
(4) Jamnagar State Railway.

The Bhavnagar Railway comprised the length from Wadhwan to Dhasa including Dhrangadra Railway and the branches to the Bhavnagar Railway main line from Wadhwan to Dhasa.

The Gondal Porbandar State Railway was given the working of the length from Dhasa to Porbandar including Jetalsar-Rajkot Railway.

The Jamnagar Railway works its own railway from Rajkot to Jamnagar and the Junagad State Railway took over the working of its system from Jetalsar to Veraval including its branches.

Before independent working was actually started the Railway Board was invited to decide questions relating to rating, routing and division of competitive traffic with a view to avoid wasteful competition and the decision of the Railway Board on the question in dispute was as follows, which had effect from 1st October 1911.

Goods Traffic.

" 1. *Competitive traffic from and to Wadhwan and* viâ *to and from the ports of Porbandar, Veraval and Bhavnagar.*

" Traffic governed by the agreements with the Bombay, Baroda and Central India Railway to be routed direct to and from Bhavnagar by the Bhavnagar Railway.

" Traffic to and from the port of Veraval to be routed *viâ* Jetalsar and Rajkot. Total charge made to be divided by all the lines concerned in mileage proportion. Rates *viâ* the Dhola route to be maximum class rates, and the rates *viâ* the Rajkot route to be adjusted so as to be lower than the *viâ* Dhola route.

" Traffic to and from the port of Porbandar to be routed *viâ* Dhola. Total charge made to be divided by all the lines concerned in mileage proportion. Rates *viâ* the Rajkot route to be maximum class rates and the rates *viâ* the Dhola route to be adjusted so as to be lower than the *viâ* Rajkot route.

(2) ***Traffic from and to Wadhwan and*** **viâ** ***to and from stations on Jamnagar Railway and Rajkot.***

"This traffic to be all routed *viâ* the Morvi Railway and other lines are not to compete for it.

"(3) *Traffic from and to Wadhwan and* viâ *and stations to and from Rajkot and Jetalsar line excluding Jetalsar station.*

"This traffic to be all routed *viâ* the Morvi Railway, other lines are not to compete for it.

"(4) *Traffic from and to Wadhwan and* viâ *to and from Jetalsar and stations on the Porbandar-Gondal and Junagad Railway.*

"To and from stations on the Junagad Railway to be routed *viâ* Rajkot.

"To and from stations on the Porbandar-Gondal Railway including Jetalsar to be routed *viâ* Dhola.

"Rates in both cases to be dealt with as in (1).

"(5) *Inter local Traffic.*

"Excluding traffic to and from the ports traffic from and to stations on one system of the Kathiawar Railways to and from stations on another system of the Kathiawar Railways to be routed according to the shortest route and rates adjusted accordingly.

"(6) Traffic to and from the ports from and to stations on the Kathiawar Railways.

"For traffic to, from and *viâ* the ports from and to any stations on the Kathiawar Railways except Wadhwan and *viâ* each railway system to make any charges it chooses within the maxima and minima authorised subject to the following provision.

"The agency, working the Rajkot-Jetalsar railway shall quote the same charges from and to stations on that railway including Rajkot and *viâ* to and from *viâ* Jetalsar for all consignments irrespective of stations of destination or despatch."

This decision was accepted by the Railways concerned. It is to be noted that the Native State Railways belonging to the Native States agreed to accept the decision of the Railway Board as final in the matter of dispute between them as to railway rates.

Division of Bengal coal traffic from E. I. Ry. collieries to Agra between the E. I. Ry. direct route and the G. I. P. Railway route viâ Manikpur.

It will be remembered that with the termination of the Jubbulpur agreements of 1898 and 1903, the Great Indian Peninsula Railway lost all interest in traffic between Agra and East Indian Railway stations east of Allahabad as the provisions of 1898 agreement were that if the agreement was ever cancelled it would be cancelled as a whole and not in part. But in 1911, the East Indian Railway agreed to pool the Bengal coal traffic for Agra between the East Indian Railway direct route and the East Indian and Great Indian Peninsula Railways' joint route *viâ* Manikpur in ratio of $\frac{4}{7}$ths to the former, the shorter route, $\frac{3}{7}$ths to the latter, the longer route. This arrangement was perhaps in the interests of the Agra mill owners who found it convenient to order their coal to Belanganj goods depôt of the Great Indian Peninsula. The East Indian Railway would not ordinarily get such traffic, which would be carried from the collieries on the Bengal-Nagpur Railway to Agra-

Belanganj goods depôt *viâ* the Great Indian Peninsula Railway, because this goods depôt belongs to the Great Indian Peninsula Railway, and under agreement between the East Indian, Bengal-Nagpur and the Great Indian Peninsula Railways, the Bengal-Nagpur Railway, with equal rates to those in force by the East Indian Railway route, would carry coal from their collieries to Agra-Belanganj goods depôt of the Great Indian Peninsula Railway by the longer route over the Bengal-Nagpur and Great Indian Peninsula Railways *viâ* Katni-Marwara, because the East Indian Railway have not got access to Great Indian Peninsula Railway Belanganj goods depôt, except *viâ* Katni or *viâ* Cawnpore or *viâ* Manikpur. Therefore, the East Indian Railway thought it best to divide coal for Agra-Belanganj with the Manikpur route as when booked *viâ* Manikpur coal can be booked by the East Indian Railway from their collieries but it cannot go *viâ* Agra-Jumna Bridge.

Agreement between G. I. P. Ry. and the B., B. and C. I. Ry. for traffic other than that between Bombay and the Northern India.

The satisfactory settlement between the Great Indian Peninsula and Bombay, Baroda and Central India Railways, following the opening of the Nagda-Muttra Railway, in regard to traffic between Bombay and Northern India helped amicable and equitable settlements on broad lines between the two railways in respect of all other competitive traffic that was not comprised in the Bombay agreement.

The following principles were agreed to be adopted in the matter of routing all other traffic than between Bombay and Northern India.

"1. For traffic between purely internal stations, *i.e.*, where both the despatching and receiving stations belong to the same railway, and the other railway is not represented at either, there shall be no competition, *i.e.*, the railway owning the entire route shall retain the traffic by adjustment of rates if such will allow of it.

"2. For traffic between junctions where both railways are jointly interested, or where each railway has a separate station, the shortest route shall retain the traffic when the difference in distance between the two routes exceeds 33 per cent. When the difference does not exceed 33 per cent., the rates shall be equalised and traffic divided equally, the railway carrying any traffic in excess of its share to retain 50 per cent. of the excess the balance being credited to the other route. When three or more routes are concerned, the two shortest routes only shall be considered, and the case dealt with as if the other route or routes did not exist.

"3. For traffic between points (*a*) where the two Railways have a common junction or each has a separate station, and (*b*) a purely internal station of one of the Railways concerned, the latter having also what might be called "an entirely owned route," as for instance, Cawnpore where both the Great Indian Peninsula and Bombay, Baroda and Central India Railways have a separate station, and Rutlam, which is purely a Bombay, Baroda and Central India Railway station, the Bombay, Baroda and Central India Railway having as well an entirely owned route between Cawnpore and Rutlam the following principle will be observed" :—

"(1) The Railway owning the entirely owned route shall be permitted to retain the whole of the traffic in all cases where it would be possible for it to do so by adjustment of its rates within the authorised minimum, by the route it entirely owns, as compared with the charge by the alternative route reckoned as under :—

> "Maximum rates including terminal and short distance charge for that part of the alternative route belonging to the Railway which has also the entirely owned route, *plus* the minimum rates of the other Railway that shares the partially owned route."

For example :—

Cawnpore to Rutlam . . .	Entirely owned route (Bombay, Baroda and Central India Railway)
Cawnpore to Rutlam *viâ* Ujjain .	Partially owned route (Great Indian Peninsula and Bombay, Baroda and Central India Railways).

"(*a*) The entirely owned route (Bombay, Baroda and Central India) to calculate charges at its minimum rate between Cawnpore and Rutlam.

"(*b*) On the partially owned route, the Great Indian Peninsula Railway will base its charges on its minimum rate between Cawnpore and Ujjain, and the Bombay, Baroda and Central India Railway between Ujjain and Rutlam will quote its maximum rate *plus* short distance and terminal charges.

"(*c*) If, calculated on this basis, the charge under (*a*) is less than that under (*b*), the entirely owned route (Bombay, Baroda and Central India Railway) carries the traffic the partially owned route (Great Indian Peninsula and Bombay, Baroda and Central India Railways) retiring or *vice versâ*.

"(ii) If three or more routes are concerned, the entirely owned route and the cheapest alternative route (if rates are calculated on the bed rock principle) only, shall be considered and the case dealt with as if the other route or routes did not exist.

"(iii) In calculating the bed rock rates under this paragraph $\frac{1}{10}$th pie per maund per mile shall be considered the minimum for 1st class, one-sixth pie per maund per mile for other classes, six pies per maund as the terminal charge, and 3 pies per maund as the short distance charge; the latter to be included only when the distance over one of the railways is 75 miles or less.

"(iv) This arrangement shall apply both to local traffic and to through traffic to and from Foreign Railways."

Block rates to and from Broach

The Bombay, Baroda and Central India Railway have to face competition between Bombay and Broach with the sea route. The traffic between Bombay and the Bombay, Baroda and Central India Railway stations in the vicinity of Broach and north thereof is affected by this competition. The combination of the cheap sea freight between Bombay and Broach, combined with the usual class, telescopic scale and special rates to and from Broach, would make the rail-cum sea route cheaper necessitating large reduction in rates on the part of the Bombay, Baroda and Central India Railway to and from Bombay. Therefore, in respect of such traffic, which does not actually originate at Broach or is not required for local consumption but is exported to or imported from Bombay (such as grain, kerosine oil, piece goods, sugar, iron, etc., to and from stations other than Broach), the Bombay, Baroda and Central India Railway were permitted, in order to avoid unnecessary reduction in rates, to levy on such goods 4th and 5th class rates in booking to and from Broach sanctioned by the Railway Board in August 1910. The object of this exceptional procedure was to avoid the importations of Bombay traffic to Broach by sea to be railed from there to places of ultimate destination. The railway rates between Bombay and stations of original despatch or of ultimate destination quoted by the Bombay, Baroda and Central India Railway were such as the through traffic and its development required having regard to rates quoted by the Bombay, Baroda and Central India Railway for similar traffic for similar-leads and same weight. There were complaints against the quotation of these block rates to and from Broach. Broach, being a sea port, was a great distributing centre before the opening of the railway, but it is an admitted fact that throughout India, specially in the Gangetic plains, many big towns and trade centres were formerly on the river side but with the improved method of land communication and transportation places close to the railway began to grow and the old distributing centres ceased to command large areas. For instance Patna used at one time to receive and despatch traffic to and from places which are now served by the Bengal and North-Western Railway.

Before the opening of this metre gauge system the rivers Gundak and Gogra were the means of communication and the centre for such traffic was Patna from where it used to be carried over the Ganges eastwards. When the East Indian Railway was opened the carriage of traffic from Patna eastwards was taken over by them although there is still some competition with the steamer companies, and then when the Bengal and North-Western Railway opened their line the trade, for which Patna was the centre and which used to be carried over the rivers Gundak and Gogra, was lost to Patna entirely and the Bengal and North-Western Railway captured the trade at places of origin. Therefore, even if Broach was once a big distributing centre the change in the conditions that has taken place is not confined to Broach alone.

A case like that of Broach is that of Marmagao Harbour where the traffic is divided between rail-cum sea route and all rail route. Although at first sight the two cases would appear alike it is well known that Marmagao Harbour has conditions of its own, which do not apply at Broach namely, *viz.*, the existence of the West of India Portuguese Railway. It is not in order to encourage bookings to Bombay by the combined rail and sea route *viâ* Marmagao that through rates are quoted by that route but to give a share of the Bombay-Southern Mahratta traffic to the West of India Portuguese Railway as the British Government guaranteed to give this railway similar treatment in the matter of rates as to the Great Indian Peninsula Railway in respect of traffic to and from the Southern Mahratta Railway.

But the point in connection with block rates to and from Broach is that the maximum rates permitted to safeguard the interests of the Bombay, Baroda and Central India Railway are higher than the maximum for such goods booked to and from anywhere else in India. For instance, the maximum for grain booked to and from Broach is 5th class, namely 1 pie per maund per mile, against the ordinary maximum of 1st class rate of ⅓rd pie per maund per mile.

As already observed, the object of the block rates to and from Broach was to obviate the reductions in railway rates on the part of the Bombay, Baroda and Central India Railway to and from Bombay, which must otherwise be made to enable the Bombay, Baroda and Central India Railway to retain the traffic over the longest lead possible unless they are prepared to give up the traffic in grain at Broach and to receive the imported goods from the steamer for onward rail carriage at Broach. The whole thing is, therefore, narrowed down to long haul *versus* short haul, and in such cases the railways quote the lowest possible rates over the longest lead and the highest possible rates are charged over the shorter lengths. The highest rates are generally made up of the maximum rates of the class *plus* the maximum terminals, but in no case the classification is specially allowed to be raised in order to minimise the effects of the competition in lowering of rates, (except that in the case of cotton, over the Tapti Valley Railway the classification was raised from 2nd class to 3rd class so as to enable the Great Indian Peninsula Railway to retain its rates for cotton from Khandesh to Bombay). The main point for consideration by any one deciding the case would be what the said railway charges in similar cases of short hauls in order to retain the traffic over a longer lead. The next consideration would be whether the loss to the railway in the case of diversion of traffic *viâ* Broach or the loss that will be caused by lowering of rates, would be such as will eventually affect the interests of the public as well as of the railway. The withdrawal of the block rates would benefit such persons who are able to take advantage of the Broach route, but if the railway has to suffer a loss in order to retain the traffic to the all rail route they might try to make it up by enhancement in other directions where there is no competition. If this be so, and, if in addition, the reduction in the rates to and from the competitive zone makes a differentiation between such rates and the rates to and from stations just outside but near the competitive zone then the public interest affected by the withdrawal of the block rates will be greater than the public interest affected by the block rate at present. The benefit to Broach itself cannot be very large, because the traffic involved does not either originate or terminate at Broach. What Broach hopes to earn is middleman's profit, and it is to be considered whether in the interests of the public it is advisable that the profits of a great public concern like that of a State-owned railway, though worked by a Company, should be transferred and allowed to be divided largely between a private steamer company and a few middlemen. It is true that the producer and the consumer will also gain but their gains will be small compared with the gains of the steamer company and of the middlemen at Broach. Admitting, however, that after the withdrawal of block rates the railway is allowed to quote as low a rate as it can afford to charge to retain the traffic to the all rail route and is permitted to infringe its minimum, as the East Coast Railway (or rather the Madras and Southern Mahratta and the Bengal Nagpur Railways) has been allowed in competition with the sea route, it will then not benefit Broach, but will mean that the railway will lose without an increase in its business, and although there will be some gain to a few individual producers and consumers in the competitive area the loss to the railway (*i.e.*, in the public revenue) and the differentiation that such reduced rates will create between the rates in the competitive area and those just outside that area will affect the public interests more largely than the interests at present affected by the block rates. But there is another side to be considered. If Broach route is allowed to be blocked by the Bombay, Baroda and Central India Railway by unprecedentedly high rates, the Government will be asked for such rates by other railways. *The legality of the present procedure is also doubtful. The Government are allowed to fix certain maxima and certain minima rates for each class of traffic, under agreement between each railway company and the Government, but it is nowhere laid down that a special high maximum will be permitted for traffic to and from a particular station.*

There is however one important point in this connection. Steamers do not now run between Broach and Bombay, and if the competition with country crafts between Surat and Bombay or between Navsari and Bombay or Bulsar and Bombay on the Bombay, Baroda and Central India Railway have not required block rates on the basis of Broach rates it seems questionable whether very high rates are needed at Broach.*

Military Traffic rates.

The question whether the wagon rates introduced for military traffic in 1908 were profitable to the railways or not was taken up towards the end of 1910 for it will be remembered the rates were introduced tentatively. The Railways claimed large losses and the Army Department admitted substantial savings and as it was not the intention that the rates were to inflict losses to the railways a slight increase in the rates were allowed from 1911. The revised rates were :—

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* NOTE.—Since writing the above the higher classification on Broach traffic has been removed.

Coaching.

	Standard gauge.			metre or smaller gauge.		
	Rs.	A.	P.	Rs.	A	P
Per wheeled vehicle per mile . . .	0	5	0	0	3	6
Per bogie vehicle per mile . . .	0	10	0	0	7	0
Per 6 wheeled vehicle per mile . . .	0	7	6	0	5	3

Goods.

	Rs.	A.	P.	Rs.	A.	P.
Per 4 wheeled vehicle per mile . . .	0	4	9	0	3	3
Per bogie vehicle per mile . . .	0	9	6	0	6	6
Per 6 wheeled vehicle per mile . .	0	7	3	0	4	9

These rates are in force at the present date.

The terms of the agreement between the Rohilkhund and Kumaon and the Oudh and Rohilkhund Railways for traffic between Sitapur an *via* and stations on the Oudh and Rohilkhund and the Rohilkhund an Kumaon Railways, approved and recorded by the Railway Boar in 1912 were as follows :—

Terms of revised agreement between the R. and K. and the O. and R. Rys. regarding Sitapur traffic.

" 1. For traffic of all kinds booked to, from, and *viâ* Sitapur from, to, and *viâ* Bareilly (including local or through Oudh and Rohilkhund Railway traffic beyond Bareilly), the Rohilkhund and Kumaon Railway shall fix, within the maximum permissible, the charges for Railway fares and freight between Sitapur and Bareilly, and the Oudh and Rohilkhund Railway shall not quote lower charges.

" 2. For traffic of all kinds booked to, from and *viâ*, Sitapur from, to, and *viâ*, Bareilly (including local or through Oudh and Rohilkhund Railway traffic beyond Bareilly) which is carried by the Oudh and Rohilkhund Railway route, that Railway shall pay 50 per cent. of the gross receipts attributable to the line between Sitapur and Bareilly to the Rohilkhund and Kumaon Railway.

" 3. The 50 per cent. of the gross receipts received by the Rohilkhund and Kumaon Railway under clause 2 shall be treated as earnings of the Lucknow-Bareilly Railway.

" 4. Thus 50 per cent. of all traffic from any source to any destination, passing over the Chord between Sitapur and Bareilly, will be credited to the Rohilkhund and Kumaon Railway as earnings of the Lucknow-Bareilly Railway, at rates or fares per mile which are not lower than those from time to time fixed or agreed to by the Rohilkhund and Kumaon Railway.

"5. Similarly for traffic of all kinds booked to, from and *viâ*, Sitapur from, to, and *viâ*, Lucknow (including local or through Oudh and Rohilkhund Railway traffic beyond Lucknow), the Rohilkhund and Kumaon Railway shall fix, within the maximum permissible, the charges for Railway fares and freight between Sitapur and Lucknow, and the Oudh and Rohilkhund Railway shall not quote lower charges.

"6. For traffic of all kinds booked to, from, and *viâ*, Sitapur from, to, and *viâ*, Lucknow (including local or through Oudh and Rohilkhund Railway traffic beyond Lucknow), which is carried by the Oudh and Rohilkhund Railway route, the Oudh and Rohilkhund Railway shall pay 50 per cent. of the Gross Receipts attributable to the line between Sitapur and Lucknow.

"7. And the 50 per cent. of the Gross Receipts received by the Rohilkhund and Kumaon Railway under clause 6 shall be treated as earnings of the Lucknow-Bareilly Railway.

"8. The Oudh and Rohilkhund Railway agrees to do all in its power to prevent re-booking in cases where, under the terms of this agreement, the through rates are higher than the sum of the local rates, and undertakes to report in writing to the Agent, Rohilkhund and Kumaon Railway, all such cases as may come to its notice.

"9. Sitapur is to be reckoned as any station in or around Sitapur, however it may be called, within a reasonable distance of the town, and is not limited to the Lucknow-Bareilly existing station of that name."

Manganese ore traffic from the Central Provinces to the ports for export.

There were, between 1911 and the time the present war broke out, difficulties in the way of the export traffic in manganese ore of the Central Provinces, from the mines in the vicinity of Nagpur, finding its way to Bombay, owing to blocks on the Great Indian Peninsula Railway. Therefore, as the Bengal-Nagpur Railway had always empty wagons running in the direction of Calcutta from Nagpur—particularly, wagons returning from the Great Indian Peninsula Railway after discharging the up load of Bengal coal—it was represented by the proprietors of the mines, for the first time in 1911, that instead of the traffic being allowed to be detained it should be carried *viâ* the Calcutta port, and that as this could not be done without the Railway freight from Nagpur to Calcutta being made the same as the Railway freight from Nagpur to Bombay, it was asked that the Railway freight to Calcutta should be made the same as that to Bombay. This, however, could not be done because the freights from Nagpur to Bombay and Nagpur to Calcutta were already at the minimum of $\frac{1}{10}$th pie per maund per mile, and the distance from Nagpur to Bombay being 520 miles against 703 miles, the distance from Nagpur to Calcutta, the application of the Bombay rate to Calcutta would have meant infringement on the minimum. Perhaps, owing to the cheap cost of operation on the Bengal Nagpur Railway as compared with that on the Great Indian Peninsula Railway, and also in view of empty wagons being available in the direction of Calcutta, which have to be hauled up to the coal districts in any case, a lower rate than the minimum of $\frac{1}{10}$th pie, *viz.*, $\frac{1}{14}$th per maund per mile, would have been a paying rate, but this would have created a precedent and would have led to similar applications being made in other directions. It may, however, be pointed out that if this low rate was to be allowed only when the Bombay route was blocked, it would not have been without a precedent, because the Bengal Nagpur Railway are allowed to go below the minimum of $\frac{1}{10}$th pie for grain and seeds traffic from the Oudh and Rohilkhand Railway to Shalimar, when they have to carry such traffic *viâ* Gomoh to Shalimar, in the event of the East Indian Railway having to restrict bookings to Howrah owing to their terminus being blocked. The two cases are not exactly parallel, and it is certain that in the event of such a procedure being more generally accepted one cannot say where it would end, for each Railway can perhaps point out some cases of this nature. In the case of traffic from Oudh and Rohilkhand Railway to Calcutta (Shalimar) the circumstances are, however, somewhat different for before the route from Moghalserai to Gomoh was built the idea was that this should form a part of an independent route from the Northern India to Calcutta, and as in the case of minimum rates charged over the shorter distance to Calcutta *viâ* the East Indian Railway, equalisation is only possible by infringement of the minimum by the longer route *viâ* Gomoh ; this is allowed in order to take advantage of the alternative route which would otherwise be impossible.

*Agreement between the G. I. P. and the B., B. and C. I. Rys. regarding traffic between Bombay and Northern India.**

In the agreement concluded in 1910 between the Great Indian Peninsula and the Bombay, Baroda and Central India Railways in respect of equal division of traffic between Bombay and

Delhi	Cawnpore
Agra	Muttra

Hathras

no provision was made as to what a railway would be entitled to get and what it would be required to refund, if it carried during a fixed period a quantity in excess of its equal share. In previous agreements 50 per cent. of the earnings of such traffic, carried by a railway over and above its allotted share, used to be made over to the railway which carried less than its proper share, but it was thought that if a railway was allowed 50 per cent. in respect of any traffic carried in excess, the element of competition would remain, and as the object was not to encourage any railway to carry more than its half share it was decided to reduce the payment from 50 per cent. to 25 per cent., and this percentage was accepted in the agreement referred to between the Great Indian Peninsula and the Bombay, Baroda and Central India Railways.

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* See page 180.

Traffic from Dacca and Naraingan to Calcutta.

The extension north of the Mymensingh-Jagannathganj Railway to Bahadurabad Road on the left bank of the river Bramhaputra opposite Fulchari the terminus of an extension from Bonarpara on the Eastern Bengal State Railway, Santahar-Kaunia loop, drew the attention of the Eastern Bengal State Railway and of the Steamer Company in 1912, and it was pointed out by the Eastern Bengal State Railway that the opening of this extension, combined with a wagon ferry plying between Bahadurabad Road and Fulchari, would obviate the necessity for the carriage of Dacca and Naraingan traffic to and from Calcutta by the combined rail and steamer service *viâ* Goalundo. The River Steam Navigation Companies claimed that the entire traffic hitherto carried by the steamers direct, as well as traffic carried by the combined railway and steamer service, should be included in the pool. After discussion it was allowed to let matters stand as they were, but the Steamers Companies agreed to route Naraingan jute traffic *viâ* Khulna.

The railways now afford direct communication but the railway rates are controlled more or less by the steamer rates.

Bombay Port Trust Railway.

The Great Indian Peninsula Railway constructed a Harbour branch from Kurla to Warli, parallel to their own line, the branch running along the sea side *viâ* Cotwada, Sewri and Tank Bunder to serve the Bombay Port Trust Railway which runs from Wadi Bunder, the Great Indian Peninsula Railway Bombay terminus, to Carnac Bunder, Bombay, Baroda and Central India Railway terminus, in continuation of the Great Indian Peninsula Railway Harbour Branch, and serves Princes Docks and Victoria Docks and has several stations of its own.

The important concession agreed to by the railways to the Bombay Port Trust Railway were as follows :—

(1) The Great Indian Peninsula and the Bombay, Baroda and Central-India Railways were to quote for inward goods to Bombay the same charges for Railway freight, excluding terminal, to the point of junction with the Bombay Port Trust Railway as to their own Goods Depôts.

(2) Similarly for outward goods intended for direct shipment from the Docks and other Port Trust Railway stations the Great Indian Peninsula Railway and the Bombay, Baroda and Central India Railway were to quote the same freight charges from *viâ* the Port Trust junction as those from Wadi Bunder and Carnac Bunder respectively excluding terminal.

(3) It was generally accepted that the railways would not extend their accommodation at their Bombay terminus in order to encourage warehousing of goods, such point of the service being considered as coming within the scope of the Bombay Port Trust.

1914.

Traffic agreements between the Kathiawar Railways and the division, rating and routing of port traffic.

In September 1914, the Native State lines in Kathiawar came to an arrangement between themselves whereby the routing of export traffic to Bombay from the various stations were settled. The Bhavnagar Railway have their port at Bhavnagar Docks on the Gulf of Cambay and that railway was allowed to retain the traffic to that port from stations on its system and from Lathi, Khijadiah, and Chital stations on the Gondal-Porbandar Railway as well as from Khijadiah to Dhari branch of the Gondal-Porbandar Railway.

Rajkot is the junction between Jetalsar-Rajkot Railway (worked by the Gondal-Porbandar Railway), the Morvi Railway and the Jamnagar Railway. The nearest port for this station is Bidi Bunder, the terminus of the Jamnagar Railway on the Gulf of Cutch. It was arranged that the railway rates were to be in favour of Bidi Bunder port but that the traffic would be allowed to take either route it preferred, *viz.*, Bidi Bunder, Porbandar port or the Veraval port. The Porbandar port is the western terminus of the Gondal-Porbandar Railway and the Veraval port is the southern terminus of the Junagad State Railway.

In respect of traffic from Gondal on the Jetalsar-Rajkot Railway it was agreed that this railway would quote same mileage rate from Gondal to Rajkot junction and to Jetalsar junction. The Junagad Railway, running south from Jetalsar to Veraval, and the Jamnagar Railway, running west from Rajkot to Bidi Bunder, were to quote maximum rates for this traffic over their lines to their ports. The rates being thus fixed, the traffic was allowed to take either the Veraval, Porbandar or the Bidi Bunder port. For traffic from all stations on the Gondal-Porbandar State Railway west of Lunidhar it was agreed that it should take the Porbandar Railway route and the Junagad Railway was not to compete for this traffic nor to attract it to their railway and the Veraval port. In this consideration it was accepted that in respect of traffic from the Jetalsar-Rajkot Railway (except for Gondal which had already been provided for) the Junagad Railway was to carry this traffic to Bombay over its line up to Veraval port.

Agreement between the B., B. and C. I. and the Bhavnagar Railway regarding viâ Wadhwan traffic.

A dispute, however, arose between the Bombay, Baroda and Central India Railway and the Bhavnagar Railway in regard to the rates for cotton from Dhangadra and Wadhwan, and *viâ* Wadhwan to Bombay. Under an agreement concluded in 1911 this traffic was divided between all rail route *viâ* Wadhwan and the Bombay, Baroda and Central India Railway and the combined Railway and sea route *viâ* Bhavnagar port in ratio of 75 per cent. to the all rail route and 25 per cent. to the combined rail and sea route. The dispute arose owing to the Bombay, Baroda and Central India railway rate *viâ* Wadhwan to Bombay for certain stations (*viz.*, Dhangadra, Limbdi, Ranpur, Betad) being fixed at Re. 0-7-1 whereas the rate from Wadhwan itself was Re. 0-7-10 to Bombay *viâ* Bhavnagar Docks, Re. 0-8-10 being the rate by the Bombay, Baroda and Central India

Railway, *viz.*, the all rail route. The matter was referred to the Railway Board because the Bhavnagar Railway were quoting from *viâ* Dhangadra to *viâ* Wadhwan, 21 miles, Re. 0-1-10 per maund when the traffic took the all rail route, against Re. 0-0-7 per maund over the same distance when traffic was routed *viâ* Bhavnagar port. The distance of 21 miles (Dhangadra State Railway) was not owned by the Bhavnagar Railway but was worked by them. This constituted undue preference in the opinion of the Bombay, Baroda and Central India Railway. The matter was, however, settled amicably between the Bombay, Baroda and Central India Railway and the Bhavnagar Railway, whereby the through rate for cotton from Dhangadra to Bombay *viâ* Wadhwan and the Bombay, Baroda and Central India was made one anna higher than the combined rail and sea route *viâ* Bhavnagar Docks.

Indo-Ceylon connection and the dispute between the S. I. Railway and the Ceylon Government Railways regarding through rates.

The Indo-Ceylon connection was completed in 1914 but the question of competition between the South Indian Railway Company and the British India Steam Navigation Company on the opening of this connection had been under discussion for sometime past.

In 1912, an agreement was concluded between the South Indian Railway Company and the British India Steam Navigation Company in connection with the routing of traffic between India and Ceylon on the opening of the Indo-Ceylon Railway.

The main features of the agreement were, (i) that all traffic from stations south of Madura to Colombo and *vice versâ* would be continued to be routed *viâ* Tuticorin. The new route *viâ* Danashkhodi and Talai-Manar was to get the traffic from all other stations of the South Indian Railway to Colombo and *vice versâ*.

This arrangement of routing was not intended to apply to any other station in Ceylon than Colombo. The transhipment of goods traffic at Danashkhodi and Talai-Manar was to be done by the Madura Company, who was also a party to the said agreement at a rate of Re. 0-4-0 per ton.

The routing was to be followed in booking in the opposite direction, *viz.*, from Colombo to India to the respective groups of stations above mentioned.

(iii) Through rates and fares shall be quoted from all stations by both routes, a difference being made, if found necessary, in favour of the prescribed route of such amount as may induce traffic to follow that route, both companies doing all in their power to encourage booking by the prescribed route and through booking of traffic to Colombo as opposed to local booking to Tuticorin or elsewhere, and re-booking therefrom to destination.

* "NOTE.—The British India Steam Navigation Company do not now quote or allow any rebate in local booking between Tuticorin and Colombo and they charge the same freight for locally booked goods as for goods booked through, but locally booked goods do not pass through the hands of the Madura Company; the merchants' own Agents (to whom the goods are consigned at Tuticorin) pay the pier, harbour and other charges incidental to transporting the goods to the ship's side.

(iv) When traffic was booked at the request of the public by other than the prescribed route it shall be carried by such route at the fares or rates (as the case may be) in force by the booked route, and in such cases the receipts shall be divided as under :—

> 50 per cent. between the lines forming the carrying route in proportion to the freight or fares by that route, to cover working expenses 50 per cent. between the lines forming the prescribed route in proportion to the freight or fares by that route, as compensation.

(v) As the closing of the Tataparai Cooly Depôt was to be prejudicial to the interests of the British India Steam Navigation Company, under the territorial division agreed to, the South Indian Railway Company would take no measures to bring about the closing of this depôt and shall observe a neutral attitude should the question be referred to them by the Ceylon Government.

The intentions of the important clauses above referred to were said by the South Indian Railway to be as follows :—

"The intention of paragraph (iii) of the agreement arrived at between this railway and the British India Steam Navigation Company, was to provide against either Company encouraging traders to book to Tuticorin or Mandapam and rebooking from there with the object of evading the through booking arrangements, and giving rise to surreptitious competition. It is not the desire to force consignors to book through in preference to booking locally. Such local and rebooking as is done now is generally due to traders desiring to make their own arrangements for lighterage from pier to shipside, as an incident of the disadvantages of the Tuticorin route. This disadvantage in booking to Colombo will disappear with the opening of the new route and it is expected that there will be little occasion for any local booking for the purpose of rebooking.

"As regards paragraph (iv) of the agreement as to the question of both Companies paying 50 per cent. of any receipts from the traffic booked at the request of the public by other than the prescribed route, the clause provides that the 50 per cent. is divisible between the lines forming the prescribed route in proportion to the freight or fares by that route as compensation for the traffic not being carried by the prescribed route. The Shipping Company would not in any case get 50 per cent. of the freight. They would only share this percentage with the South Indian Railway who would in every case receive the major part of the amount.

"The agreement was considered from the standpoint of how the receipts of the South Indian Railway would be affected if there were no agreement whatever between the Railway and the Shipping Company. The view taken is that without a compromise, there would be competition between the two Companies with loss of revenue in consequence."

It may be useful to mention here that the British India Steam Navigation Company had for a long time been in competition with the South Indian Railway for goods traffic from the coast to Ceylon and this factor was considered when coming to a settlement with them in connection with the traffic to take the Indo-Ceylon route. The British India Steam Navigation Company can tap the traffic of the South Indian Railway at the following places on the Coromandal and Malabar Coasts :—

Madras.
Pondicherry.
Cuddalore, (Old Town).
Porto Novo.
Tirumalavasal.
Karaikkal.
Negapatam.
Adirampatnam.
Quilon.
Cochin.
Calicut.
Tellicherry.
Mangalore.
Tuticorin.

Previous to the agreement in question there had already been an arrangement in respect of traffic between Coromandel Coast and Ceylon; while the British India Steam Navigation Company were to call at the coast ports between Madras and Cuddalore, the South Indian Railway were to retain the traffic from all stations on that coast south of Cuddalore.

It may be interesting to note here that Tirumalavasal poit near Porto Novo had been closed by the civil authorities in order to let the South Indian Railway carry the rice traffic for which they had quoted $\frac{1}{10}$th pie rate for long distances.

Now to refer again to the Indo-Ceylon rates—In the matter of division of rates, the Ceylon Government agreed, in the first instance, to the division of the rates on actual mileage basis, the mileage of the sea route being reckoned on its actual mileage of 22 miles instead of 44 miles (augmented distance proposed by the South Indian Railway).

The question of rates between Southern India and Ceylon has been the subject of dispute between the Ceylon Government Railway and the South Indian Railway for some time past.

1916-17 The London agreement previously referred to had been in operation for a year or so, but the Ceylon Government considered that the terms of it so far as it related to the financial success of the extension of 60 miles of their broad gauge route to form the Indo-Ceylon Railway connection were not favourable to the Ceylon Railway and, therefore, they did not accept the general principle that the through rates should be divided on actual mileage should continue.

The South Indian Railway, on the other hand, maintained that the division of rates should be on mileage basis and that for the portion of the distance by sea, *viz.*, from Dhanaskudi to Talai-Manar, the distance should be augmented in view of expensive steamer working and

high capital cost of steamers and the cost of other incidental charges due to transhipment, etc.

The case of the Ceylon Government Railway may be briefly put as follows :—

The Indo-Ceylon connection was made on the initiation of the South Indian Railway who had information as to the prospects of traffic as the traffic mostly originated in India.

The Ceylon Government Railway do not find that the mileage division of rates pay them and they seem to hold the view that as their broad gauge extension called the Manar Railway, has no local traffic of its own and is entirely dependent on the traffic from India and since the extension was made to meet the South Indian Railway Indo-Ceylon extension it is but reasonable that the rates over the Manar Railway should be such as the Railway can afford to charge.

Therefore, they propose that each railway should fix its rates up to Talai-Manar and that the sum of such rates should form the through rates, instead of the through rates being first fixed by the Tuticorin route and then divided by the Talai-Manar route on mileage as required by the South Indian Railway.

The South Indian Railway on the other hand hold the view that the through rate should not be more than the rate available by the Tuticorin route, *viz.*, the South Indian Railway rate up to Tuticorin and the rates of the British India Steam Navigation Company from Tuticorin to Colombo.

But the Ceylon Government Railway, who ask for higher proportions for their Railway, apparently consider that the facilities of transport *viá* the Talai-Manar route being greater than those *viá* Tuticorin the traffic *viá* Talai-Manar can bear a higher rate. Their great objection to the mileage division is that their haul from Talai-Manar to Colombo is a fixed mileage and, that, therefore they are entitled to a fixed rate on all trafic from stations on South Indian Railway irrespective of the hauls of the South Indian Railway. This procedure of making up the through rates is not new to India and is in operation on many Indian Railways. It would appear the whole idea of the Indo-Ceylon connection was to find a convenient port for the traffic of the Southern India and for the transport facilities of labourers, their foodstuffs and for cattle from India to Ceylon for the Ceylon plantations. It seems, however, to be the opinion of the South Indian Railway that as Ceylon gets its labour, cattle and foodstuffs from India the country most benefitted by the Indo-Ceylon connection is Ceylon and that the Ceylon Government Railway should not get anything more than the mileage division of the rates, to be fixed on the basis of the rates obtainable by the old Tuticorin route.

Apart from the question of one or the other country being benefitted, on which subject there can always be more than one opinion, the question is one which requires settlement on a commercial basis.

The first question is, was the Tuticorin route sufficient to meet the demands of traffic and to allow of its unrestricted development.

Apparently the South Indian Railway authorities did not consider the Tuticorin route sufficient at least to allow of development or else they would not have advocated the connection *viâ* Talai-Manar.

Having made the connection and the Ceylon Government Railway having been brought into it on the belief that there would be sufficient traffic to pay for the money spent on the portion of the railway they provided it is now the question of making the railways pay having regard to the interests of the public at the same time.

The two Railways are interested in the development of traffic, and this being so their interests are allied with the interests of the public.

One railway holds that the rates are capable of being enhanced whereas the other thinks that this is not so.

The whole question therefore hinges on the issue "what rates the traffic will bear."

It is true that the public had the advantage of low rates *viâ* Tuticorin route for a number of years and naturally they would clamour against an enhancement.

The British India Steam Navigation Company have since enhanced their rates from Tuticorin to Colombo and this would show that the rates are capable of enhancement unless of course the position is that the British India Steam Navigation Company do not think it worth while to continue this service. A Steamer Company when it finds that a certain service does not pay it it can take its fleet elsewhere where it will pay, but the railways are not in the same position.

There are country boats, besides the British India Steam Navigation Company's Steamers, but the inconvenience and risks attendant on transport by such means are great, and generally a more convenient, expeditious and safer route providing regular service can afford to charge a higher rate.

Unless the intention is to shut the Talai-Manar route one of the means of settling the point in dispute would appear to be as follows :—

Let the Tuticorin route remain open at the present rates.

Let the Talai-Manar route rates (except for traffic from the coasts, for which there is competition and for which low rates must be charged) be fixed on the basis of sum of local rates of the two railways up to Talai-Manar.

If it be found, after experience, that this procedure means steady diversion of traffic to the Tuticorin route with a falling off in the traffic *viâ* Talai-Manar then it can be claimed that the rates by the latter route are such as the traffic cannot bear and then a reduction in the rates must follow, although it is certain that the advantages of the Talai-Manar route would command a higher rate than the Tuticorin route, but how much higher only experiment or local enquiries on the spot can prove.

So long as the Tuticorin route remains open at the present rates there cannot be any ground for complaint from the public, except in the matter of rates from stations that are allotted to the Talai-Manar route. In fairness to the public if the rates by the Talai-Manar route are to be enhanced the rates by the Tuticorin route in respect of such stations, so far as the Railway portion of the journey is concerned, should be the same as they were before the opening of the Talaimanar route.

Enhancements in rates and fares over Indian Railways.

There have been enhancements in railway fares and rates since 1916. While the increase in the passenger fares was more with the intention to restrict travelling owing to curtailment of train service temporarily, the increase in the goods rates were contemplated for a long time. It may perhaps be necessary to reconsider the passenger fares when it is found possible to run more trains on more rolling stock and railway materials being available, but in regard to the goods rates as the enhancements have been chiefly confined to traffic to and from ports, great bulk of which represents foreign trade, while the policy of granting favourable rates to India's industries has been extended, it may not be necessary to reconsider the rates to and from the ports unless it is found that the productions of India, the surplus of which has to find a market overseers in the interests of the Indian agriculturist, are placed at a disadvantage in the markets of consumption in competition with other country's products.

The reason for the introduction of this subject in a chapter on "competition and combination and traffic agreements" is that the enhancements in the goods rates are the results of combination, after competition had settled the territories for each railway and each port, and defined the shares of traffic for various lines and routes.

The proposal to increase the goods rates was considered for the first time in 1909, at a meeting between all the Railways in Simla during the Indian Railway Conference session of 1909.

It was proposed to enhance the rates to and from ports for all commodities by 10 per cent. except for grain, for which the enhancements proposed were slight.

A statement is appended below showing what the rates were then from a few competitive centres and what the increases proposed in 1909 meant.

Rate for Kerosine Oil.

	CALCUTTA		BOMBAY		KARACHI	
	Rates in 1909	Proposed enhancement	Rates in 1909	Proposed enhancement	Rates in 1909	Proposed enhancement
	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P.
Delhi . . .	0 11 2	0 12 3	0 11 2	0 12 3	0 11 2	0 12 3
Agra . . .	0 10 9	0 11 10	0 10 9	Nil	0 10 9	Nil.
Cawnpore . .	0 8 5	0 9 3	0 10 2	0 11 2	..	..
Hathras . .	0 11 2	0 12 3	0 11 2	0 12 3	..	..
Umballa . .	0 12 8	0 13 11	0 12 8	..	0 12 8	0 13 11

Rates for iron.

—	CALCUTTA.		BOMBAY.		KARACHI.	
	Rates in 1909.	Proposed enhancement.	Rates in 1909.	Proposed enhancement.	Rates in 1909.	Proposed enhancement.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Delhi . . .	0 11 7	0 12 9	0 11 7	0 13 10	0 11 7	0 12 9
Agra . . .	0 11 7	0 12 9	0 11 7	0 12 9	0 11 7	0 12 9
Cawnpore . .	0 8 6	0 9 4	0 10 3	0 11 3	..	..
Hathras . .	0 11 7	0 12 9	0 11 7	0 12 9	..	
Umballa . .	0 12 9	0 14 0	0 12 9	0 14 0	0 12 9	0 14 0

Rates for sugar.

—	CALCUTTA.		BOMBAY.		KARACHI.	
	Rates in 1909.	Proposed enhancement.	Rates in 1909.	Proposed enhancement.	Rates in 1909.	Proposed enhancement.
Delhi . . .	0 13 5	0 14 9	0 13 5	0 14 9	0 13 5	0 14 9
Agra . . .	0 12 10	0 14 1	0 12 10	0 14 1	0 12 10	0 14 1
Cawnpore .	0 10 10	0 13 1	0 13 6	.	..	
Hathras . .	0 13 0	0 14 4	0 13 0	0 14 4		..
Umballa . .	0 15 4	1 0 10	1 0 0	.	0 14 0	0 15 5

There was a meeting between the representatives of the principal railways at Delhi in March 1910, to consider the whole question, and while it was generally accepted that enhancements could take place the matter did not proceed further.

In 1915 in a note on State *versus* Company Management of Indian Railways, which I published, the following observations were made:

"Sir James Wilson, late Financial Secretary to the Punjab Government, in his Memorandum on Wheat for the British markets, remarks that with the railway freight from Amritsar to Karachi at Re. 0-10-6 per maund, it should pay to export wheat from the Panjab to London. In fact even a higher rate would enable Panjab wheat being placed in the British market where the price of wheat is determined not by the cost of Indian wheat but by the prices of wheat imported into England from various other countries. This being the position, and looking at the fact that with rates between Re. 0-9-0 and Re. 0-10-6 per maund to Karachi from places in the Panjab there has been in the past, under normal conditions, a very big trade done in Wheat *viâ* the Karachi Port, there is absolutely no reason whatever for the rate from Delhi to Karachi to be fixed at a lower figure than Re. 0-10-0. This enhancement in the rate from Delhi will enable the raising of rates from places like Agra, Hathras and Umballa to Karachi and Bombay, and also to Calcutta, and would further assist the East Indian Railway and the Great Indian Peninsula Railway to enhance the Cawnpore rate in the case of Calcutta, to say, Re. 0-7-0 or 0-7-6 per maund, and in the case of Bombay to Re. 0-8-9 or Re. 0-9-3 per maund. This will again help the East Indian Railway, the Great Indian Peninsula and the Bombay, Baroda and Central India Railways to maintain higher rates at their stations near Cawnpore, Agra, Hathras and Delhi. Thus, the complaint of undue preference, so much talked of, will be removed, at least so far as the rates for grain and seeds to and from ports are concerned; it may be particularly pointed out that by enhancing the rates from Cawnpore to Calcutta and Bombay from Rs. 0-5-3 to Re. 0-7-0 and from Re. 0-7-0 to Re. 0-8-9 respectively, the present margin of difference in favour of, or against a port will not be disturbed, in that the present bed rock difference of Re. 0-1-9 per maund will be maintained. So far as the diversion of traffic to any port is concerned it is really the margin of difference in favour of or against a port in freight that actually controls the flow of traffic and not the mileage rate, and it is seen that the suggested enhancement will not disturb the present margin of difference. It will also be possible to readjust rates at all other stations on the whole length from Allahabad to Umballa, where rates have been reduced in most cases to $\frac{1}{10}$th pie per maund per mile. It was purely because of competition between railways that the $\frac{1}{10}$th pie rates were quoted at these competitive centres. In the Panjab, where higher rates than the $\frac{1}{10}$th pie rates prevail, there is more wheat traffic than at other stations where the rates are lower, thus proving that rates between one-eighth and one-seventh pie (or even higher) move the grain traffic over long distances freely. Seeing, therefore, that the $\frac{1}{10}$th pie rates at competitive points are not needed, they might be enhanced as suggested, whereby complaints of anomalous rates would be removed and a great deal of controversy ended. There would, however, be objections to enhancements from the interested parties, and reply to them is, that as low rates are unnecessary it is a waste of money to maintain these rates, which not only mean sacrifice of Government revenue, but invite applications for further unnecessary reductions in rates at stations nearer the ports."

The whole thing was considered by Railway Managers in 1916, and increases in rates had effect generally from 1st October in that year.

As grain is the principal item of traffic to the port it may be useful to quote a few examples of what the enhancements were :

I. The grain rates from the following stations to Calcutta have been enhanced as under :—

	Previous to October 1916.			Since October 1916.		
	Rs.	A.	P.	Rs.	A.	P.
Delhi	0	7	6	0	9	4
Hathras	0	6	9	0	8	9
Aligarh	0	6	11	0	8	11
Agra	0	6	7	0	8	7
Etawah	0	6	0	0	8	0
Cawnpore	0	5	3	0	6	10
Allahabad	0	5	3	0	6	8
Katni	0	5	11	0	7	4
Jubbulpur	0	6	5	0	8	0

II. The rates to Bombay from some places have been increased as follows :—

	Before October 1916.			From October 1916		
	Rs.	A.	P.	Rs.	A.	P.
Delhi	0	7	1	0	8	11
Agra	0	7	0	0	8	7
Cawnpore	0	7	0	0	8	7
Jubbulpur	0	6	5	0	7	5
Nagpur	0	5	5	0	7	0

III. The rise in the rates to Karachi have been as under in the following few instances :—

	Previous to October 1916			Present rates.		
	Rs.	A.	P.	Rs.	A.	P.
Delhi	0	7	7	0	9	5
Muzaffarnagar	0	7	10	0	10	0
Bhatinda	0	7	11	0	8	6
Ludhiana	0	9	8	0	10	10
Hissar	0	9	0	0	10	2
Ferozepur	0	9	0	0	10	3
Lyallpur	0	9	3	0	10	4

The low rates at the junctions and at stations in the vicinity thereof had led to complaints of undue preference and the readjustment of junction rates, which were lowered during competition between railways, enabled the railways to considerably increase the rates to and from the internal stations.

For instance, the increase in the rate of grain from Agra to Howrah from Re. 0-6-7 to Re. 0-8-7 enabled the East Indian Railway to also increase the rate from Etawah to Howrah from Re. 0-6-0 to Re. 0-8-0.

The Delhi-Karachi rate having been increased from Re. 0-7-7 to Re. 0-9-5 the North Western Railway was in a position to increase the rate from say Muzaffarnagar to Karachi from Re. 0 7-10 to Re. 0-10-0.

In the report of 1915 on "Enquiry into Rise of Prices in India" the following remarks appear :

"As the growth of communications within India has tended to equalise prices throughout the country, so the parallel development of communications with foreign countries has tended more and more to bring Indian prices into line with those of the world in general. The prices of Indian exports are governed by those prevailing, in the world's markets, and through the growing influence of foreign trade, Indian prices, apart from temporary fluctuations resulting from the character of the seasons, tend to follow the same course as world prices."

If any of the enhanced goods rates will require reconsideration, after the war, they will be the wheat and oilseeds rates but it is premature to say anything on this point at present. If it is found that the price of Indian wheat is so enhanced by the present rates that when normal conditions return India is not able to place its surplus in the markets overseas in competition with the productions of Canada, Russia, America or Argentine Republic then it will be time to reconsider

CHAPTER III.

UNDUE PREFERENCE.

Indian and English Law on undue preference and unreasonable rates.

The Indian Railways Act IX of 1890 deals with "undue preference" in Section 42 (2), which reads as follows :—

"A railway administration shall not make or give any undue or unreasonable preference or advantage to or in favour of any particular person or railway administration, or any particular description of traffic, in any respect whatsoever, or subject any particular person or railway administration or any particular description of traffic to any undue or unreasonable prejudice or disadvantage in any respect whatsoever."

Section 43, sub-sections (1) and (2) of the same Act quoted below deals with undue preference in case of unequal rates for like traffic or like services.

"Whenever it is shewn that a railway administration charges one trader or class of traders or the traders in any local area lower rates for the same or similar animal or goods, or lower rates for the same or similar services, than it charges to other traders or class of traders or to the traders in another local area, the burden of proving that such lower charge does not amount to an undue preference shall lie on the railway administration."

"In deciding whether a lower charge does or does not amount to an undue preference, the Commissioners may, so far as they think reasonable, in addition to any other consideration affecting the case, take into consideration whether such lower charge is necessary for the purpose of securing, in the interests of the public, the traffic in respect of which it is made."

Section 42 (2) is practically a reproduction of the English Law (Railway and Canal Traffic Act, 1888, chapter 25, Clause 25), an extract from which is given below for reference.

"And that no such company shall make or give any undue or unreasonable preference or advantage to or in favour of any particular person or company, or any particular description of traffic, in any respect whatsoever, or shall subject any particular person or company, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever."

In the same way, sections 43 (1) and (2) are based on sections 27 (1) and (2) of the English Act which reads as under.

"27(1). Whenever it is shewn that any railway company charge one trader or class of traders, or the traders in any district, lower tolls, rates or charges for the same or similar merchandise, or lower tolls, rates or charges for the same or similar services, than they charge to other traders or class of traders or to the traders in another district, or make any difference in treatment in respect of any such trader or traders the burden of proving that such lower charge or difference in treatment does not amount to an undue preference shall lie on the railway.

"27 (2). In deciding whether a lower charge or difference in treatment does or does not amount to undue preference, the court having jurisdiction in the matter or the commissioners, as the case may be, may, so far as they think reasonable, in addition to any other consideration, affecting the case, take into consideration whether any such lower charge or difference in treatment is necessary for the purpose of securing in the interests of the public the traffic in respect of which it is made and whether the irregularities cannot be removed without unduly reducing the rates charged to the complainant; provided that no railway company shall make, nor shall the Court of Commissioners sanction any difference in the tolls, rates or charges made for or any difference in the treatment of home or foreign merchandise, in respect of the same or similar services."

Although sections 43 (2) of the Indian Act and section 27 (2) of the English Act have the same object in view, it will be seen that there is a difference between the two, in that the English Act provides that there shall be no difference between the rates charged for home or foreign merchandise in respect of the same or similar services. The Indian Act makes no such provision.

Both the English and Indian Acts, however, provide that in deciding whether a lower charge constitutes undue preference or not the commissioners may take into account whether, such charge has been made for the purpose of securing, in the interests of the public, the traffic in respect of which such lower charge is made. It may be noted that this provision is not imperative but simply permissive; but at the same time it is also to be observed that if a lower charge is considered necessary for securing traffic to the railway it must also be in the interests of the public; or in other words, the securing of the traffic to the railway is not a ground for a lower charge unless it is also in the interests of the public.

Further, nothing corresponding to the following clause, which forms section 27 (3) of the English Act is found in the Indian Act :—

"The Court or the Commissioner shall have the power to direct that no higher charge shall be made to any person for services in respect of merchandise carried over a less distance than is made to any other person for similar services in respect of the like description and quantity of merchandise carried over a greater distance on the same line of railway."

Mr. Charles Lee Raper in his book on "Railway Transportation," published in 1912, writes as follows :—

"Since the questions of reasonableness of rates are so difficult, and at the same time so important, that the Commissioner was specially *empowered to determine what constituted unreasonableness and to decide all cases of preference of rates."*

The Commissioner referred to is the permanent Commissioner of the appointed members and of three ex-officio members (*vide* sections 1, 2, 3, 4 and 5 of Railway and Canal Traffic Act of 1888).

But no authority can be traced for the following statement in the same book (Railway Transportation by Raper):—

"It was not, however, left entirely to the Commissioners to decide upon preference in the long and short haul; it was decided that no higher charge could be made for the shorter than for the longer haul over the same line, at the same time, and in the same direction."

Section 27 (3) of the English Act quoted on last page does not appear to be imperative although it certainly gives the Commissioners the power to decide any case on this principle, but this rule does not appear to have been made absolute as would seem from Mr. Raper's book.

In the United States, however, the Railway Rate Act of 1910 definitely prohibits a greater charge for the shorter intermediate haul unless permission is obtained from the Inter State Commerce Commission. There is nothing in the Indian Railways Act corresponding either to the American or to the English Law.

In Government of India, Public Works Department, Railway Traffic, Circular No. 1446-R.T. of 12th December 1887, *which was published in the supplement to the Gazette of India* for the information of the public in dealing with the question of charging a lower rate or an equal rate for a longer than for a shorter distance, the following observations were made :—

"The question whether the charging of a lower or an equal rate for a longer than for a shorter distance does or does not constitute undue preference appears to be at present unsettled in England, although the weight of legal authority is very much against the practice, and it seems to be at least settled that charging by a Railway Company of a lower or even an equal rate for a shorter distance *does* constitute *primâ facie* evidence of undue preference. The Governor General in Council is disposed to instruct the Managers of all State Railways to accept this view of the matter until the courts of law in India give decision on the legality or otherwise of charging a lower or an equal rate for longer than for a shorter distance, and the Consulting Engineers should use their influence, in the interests of the public, to prevent any undue preference being allowed to exist on guaranteed lines."

There has not been since any legal decision in India on a case of this nature.

It was remarked in the report of the Departmental Committee of the Board of Trade in England on Railway Agreements and Amalgamations issued in 1911 that "the equalisation of charges by longer or two alternative routes to the level of those in force by the shorter is an effect which, in many cases, would not have been obtained but for competition

.... "This practice of equalising charges tends also to lower the rates between intermediate points. Thus the third class fare of 2*s.* 6*d.* which the South Eastern and Chatham Railway charge, between London and Guildford (43 miles) in order to compete with London and South Western Company's route (30 miles) is also charged between London and Chilworth (10 miles) and the goods rates charged to and from such intermediate points may also be reduced, as railway companies endeavour to keep their competitive and non-competitive rates on the same basis......................... ..."

"Charges on goods traffic are frequently equalised even where the distances are very unequal. Thus, in respect of goods traffic, the London, Brighton, and South Coast Railway Company charge the same rates between London and Guildford as do the London and South Western Railway Company for half the distance and the London and the South Western, and even the South Western and Chatham charge the same rates as the Great Western between London and Reading, although the South Western and Chatham route of about 70 miles is almost twice as long as the direct Great Western route (Owens, 12,361)."

What is "undue preference" is a question of fact, and the law only prohibits those preferences which are undue or unreasonable. A preference is not illegal unless it can be proved that is undue, or according to the strict wording of the law a preference complained of is an "undue preference," unless the railway can prove that the preference does not create "undue preference." As there have been no cases of undue preference in India tried by a court of Railway Commissioners under the Act, we can only refer to the decisions of the English Courts.

It has been held in England in several cases "that in determining whether mileage rates charged by a railway company to one trader on a lower scale than to another do or do not amount to an undue preference the Court may take into consideration the fact that one of the traders has access to a competing line of railway and also whether the lower charge or difference in treatment is for the purpose of securing the interests of the public."

It has also been decided in England that "a railway company is justified in carrying goods for one person at a less rate than at which the company carries the same description of goods for another if there are circumstances which render the cost of carrying the former less than the cost of carrying for the latter."

The following from Disney on the law of carriage by railway is also interesting :—

"Questions whether preference is undue are determined by the Railway Commissioners. In dealing with such questions they will give greater weight to consideration affecting the interests and welfare of the public than any other considerations, provided they can favour the interests of the public without laying unfair burdens on the railway company or forcing unremunerative traffic upon them. Hence, though it may be unreasonable to carry goods of a certain description to a certain station for one trader and to refuse to carry similar goods to that station for another trader in the same town, it might be quite reasonable to carry such goods for the corporation of the town while refusing to do so for any private trader. Lees *vs.* L. and Y. R. Co. (I. Ry. and Cas Tr. Cas 352)."

An agreement made with a customer for carrying at a low rate in consideration of large quantities at regular intervals is not considered undue preference for the lower rate is charged in consideration of the greater quantity, thus facilitating and reducing cost of transport, and for offer of traffic at regular intervals, which give the railway due notice to make arrangements to carry such traffic.

Some have held "block rates" and "prohibitive rates" synonymous.

"Block rates" mean rates manipulated to "block" a certain route or a railway against certain traffic.

Block rates on Indian Railways.

The block rates may be taken exception to when they cause the through charge to the public to be increased or increase the cost of goods which would ordinarily get a lower rate but for the "Block rates." In this sense, "block rates" may be called prohibitive rates.

The reason for the quotation of block rates is either to get as much out of the traffic as possible or to prevent traffic, originating on any railway system, leaving it at the nearest junction after a short haul or to prevent influx of traffic from another railway, carried over that "another line" over a long lead, but giving the line charging the high rates, only a short haul.

"Block rates" in India are, however, not "unauthorised rates" in that they are rates calculated at the maximum charge permitted by the Government for the classification under which the traffic in question comes, but it may be pointed out that the English law, in dealing with cases of enhanced rates by railways, provides that it shall lie on the Railway company to prove that the increase of the rate or charge is reasonable and that for this purpose it *shall not* be sufficient for the railway to shew that the rate or charge is within the limit fixed by an Act of Parliament or by any provisional order confirmed by Act of Parliament (Railway, and Canal Traffic Act, 1891).

Generally, in India, whenever maximum rates of this nature to block a route are charged high terminals come in addition and tend to make the charge higher still, because high terminals are sometimes specially levied although ordinarily particular class of traffic is exempted from this terminal charge.

There are instances when higher charges are made for services in respect of merchandise carried over a less distance than for similar services in connection with the same description of traffic and in similar quantities carried for a greater distance on the same line of railway and in the same direction. Such rates may be called "preferential rates," but whether they constitute "undue preference" or are "unreasonable rates" is a question of fact.

Let us take a few illustrations, where railway rates in India may be said to have been so quoted as to prevent traffic moving freely in the direction of a certain port or route or a railway and to discuss them .—

The Bengal Nagpur Railway notify in their Goods Tariff that grain for distances up to 300 miles is charged ⅓rd pie per maund per mile.

They also notify that this description of traffic is ordinarily subject to a short distance charge of 3 pies per maund, when carried for distances up to 75 miles and that the terminal of 8 pies per maund which is levied on ordinary class goods, does not apply to grain traffic or any other traffic carried at schedule (scale) rates, such traffic being subject to short distance charge of 3 pies only. But on traffic to Bombay the 8 pies terminal applies to grain.*

The case is this. The Bengal Nagpur Railway charge no terminal nor make a short distance charge on grain when hauled over their line for distances of more than 75 miles, except when the traffic is for Bombay. The Bengal Nagpur Railway perform the same terminal service (in fact 2 terminal services are performed) when the grain traffic is booked locally over that line for distance of, say, 161 miles, but no terminal is levied. When, however, the same description of traffic is carried to Bombay 8 pies are charged in addition to the maximum rate, from say Drug to Nagpur junction for 165 miles.

In the case Throp *versus* Midland Railway Company (6 Railway and Ca Tr Cas 39) it was held that "where a Company carry grain to two towns, at neither of which they perform certain terminal services for their customers it is an undue preference in favour of the traders of one town to allow a reduction of terminals in respect of services not being performed by the company if the same deduction is not allowed to the traders of the other."

Taking the rate of following stations, quoted in the way of illustration it will be seen that for distances up to nearly 200 miles from the junction of Nagpur the Bengal Nagpur Railway levy a rate of ⅓ pie per maund per mile *plus* 8 pies terminal on Bombay traffic. A large number of stations are affected, but only 3 are pointed out in the way of illustrations.

Distance from Nagpur.	Stations.	Bengal Nagpur Railway proportions of the through rate to Bombay.	——
39	Bhandara Road	0 1 9	Miles 39 × ⅓ pie = 0-1-1 *plus* 8 pies terminal = 0-1-9.
165	Drug . .	0 5 3	Miles 165 × ⅓ pie = 0-4-7 *plus* 8 pies terminal = 0-5-3.
188	Raipur . .	0 5 11	Miles 188 × ⅓ pie = 0-5-3 *plus* 8 pies terminal = 0-5-11.

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* The Bengal Nagpur Railway have since made the 8 pies terminal applicable generally and not on Bombay traffic alone.

The rates to Calcutta and to *viâ* Nagpur from two of the above stations are as follows :—

To viâ Nagpur for Bombay.

	Miles.	Rs.	A.	P	Per maund per mile. Pie.
Drug	165=	0	5	3=	·38
Raipur	188=	0	5	11=	·38

To Calcutta.

	Miles.	Rs.	A.	P	Pie.
Drug	537=	0	7	9=	·18
Raipur	514=	0	8	3=	·19

(1) In the first place, the rates to *viâ* Nagpur for Bombay are on a high mileage basis when the lead is say 200 miles, for instance for Raipur, (*viz.*, almost ·40 pie per maund per mile).

(2) The terminals are exceptional for Bombay traffic.

In the case of rates for Calcutta, they are in many cases higher for the shorter distance than for the longer. Drug and Raipur are on the same line and on the same route and the traffic from Drug passes Raipur when it goes to Calcutta and in both cases the traffic in grain is heavy. Yet it will be seen while the rate from Drug to Calcutta for 537 miles is Re. 0-7-9 per maund that from Raipur to Calcutta is Re. 0-8-3 per maund for 514 miles, a higher rate for a short haul than for a long haul.*

The reasons for such a discrimination appear to be as follows :—

Drug is nearer Bombay than Raipur is, and the rate from Drug to Bombay is Re. 0-12-3 per maund and that to Calcutta is Re. 0-7-9, so that the difference in favour of Calcutta is Re. 0-4-6 per maund. Whereas from Raipur, the distance to Bombay is greater and because of the Bengal Nagpur Railway charging ⅓ pie per maund per mile *plus* 8 pies terminal up to Nagpur junction, the through rate from Raipur to Bombay is Re. 0-12-11, and, therefore, even with a higher rate of Re. 0-8-3 from Raipur to Calcutta, the Bengal Nagpur Railway are able to maintain a greater margin of difference (*viz.*, Re. 0-4-8) at Raipur than at Drug (*viz.*, of Re. 0-4-6 per maund) for Calcutta.

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* The Bengal Nagpur Railway are introducing a scale of rates for gram, etc., whereby the anomaly of charging higher rates for short distances and lower rates for longer distances is removed. The scale which is on a telescopic basis is :—

For distances 1 to 300 miles . . ⅓rd pie per maund per mile.
Plus ,, ,, above 300 ,, . . $\frac{1}{10}$th ,, ,, ,, ,,

This is obviously the reason for a higher rate from Raipur than from Drug to Calcutta, although Raipur is nearer Calcutta than Drug and the traffic from both places is carried under equal conditions, *viz.*, in same weight per consignment, and probably Raipur gives a higher traffic than Drug and yet Drug has a lower rate for a greater distance. It will thus be seen that the Bengal Nagpur Railway rates are based on the principle "why sacrifice revenue when you can get a higher rate." They charge a higher rate from Raipur to Calcutta, a shorter distance than from Drug to Calcutta, a longer distance, because they consider it useless sacrifice of revenue to quote a lower rate than what they get at present at Raipur.

As regards grain traffic from the Central Provinces to Bombay, the Bengal Nagpur Railway have apparently found that they cannot prevent traffic going to Bombay. The chief reasons probably are that in respect of wheat required for local consumption in Calcutta the grain mart is at Howrah and the Bengal Nagpur Railway not having got entrance into Howrah, their goods shed being at Shalimar, they are at some disadvantage.

Then, the trade of places on the Bengal Nagpur Railway in Central Provinces is in the hands of the "Borah" merchants from Bombay, who purchase direct through their own agents on the spot, and their chief business centre being Bombay, they despatch wheat there. There must be some such reason because it is known that in the case of traffic from the places served by the East Indian Railway it was seen (at least up to 1911) that a margin of Re. 0-3-9 per maund in railway freight in favour of Calcutta was sufficient to attract traffic in wheat to Calcutta for export to England in competition with Bombay, whereas in case of the Bengal Nagpur Railway the differences are higher than Re. 0-4-0. And as to local wheat traffic Calcutta gets wheat even from places near Delhi with very small difference in the rate in favour of Calcutta but not much from the Central Provinces for local consumption.

Therefore, the Bengal Nagpur Railway, seeing that they cannot induce traffic to Calcutta, want to make as much out of the traffic as possible when it goes to Bombay, but whether their 8 pie terminal on Bombay traffic is justifiable is open to question. In England, the maximum rates and the terminals are both illegal unless sanctioned by an Act of Parliament or the Board of Trade. The English Law [Railway and Canal Traffic Act (Section 24 (1) of 1888)] provides "that all terminal charges proposed to be authorised in respect of each class of traffic and *the circumstances* under which such terminal charges are proposed to be made shall be fully stated when submitted to the Board of Trade for approval."

In India, while the maximum and minimum rates are sanctioned by the Government before a railway can levy a rate, neither the terminals nor the reasons for their being levied are submitted for the specific approval of the Government of India, Railway Department.

One of the contentions on behalf of the public will be that the natural flow of the traffic from the Bengal Nagpur Railway stations in the Central Provinces in the districts of Nagpur, Drug, Raipur and Bilaspur is towards Bombay, as the traffic is yet finding its way to Bombay inspite of high rates, and that, therefore, the levy of the maximum rate *plus* 8 pies terminal constitutes an unreasonable charge inasmuch as it increases the cost of the produce to the port, to which the flow of traffic is natural.

While under the Bengal Nagpur Railway scale of rates the charge for 300 miles would be about Re. 0-9-0 per maund, *viz.*, ⅓ pie per maund per mile *plus* 8 pies terminal, the East Indian Railway rate for this distance would be Re. 0-4-7 per maund. The East Indian Railway scale is considerably lower. For 300 miles the East Indian Railway rates are half the Bengal Nagpur Railway rates.

But the East Indian Railway also while publicly notifying that goods coming under the category of the old special class (a list of which appear in their Goods Tariff) are only subject to the following terminal :—

3 pies up to 75 miles,

No terminal beyond 75 miles,

make an exception in the case of junctions with the Bombay and Karachi lines, for they levy an additional terminal of 6 pies* per maund on traffic received to and from the following junctions .—

(This was introduced on special class traffic in 1905 during the competition with Bombay lines.)

Cawnpore.
Jubbulpore.
Katni.
Manikpur.
Agra.
Furrakhabad.
Hathras.
Delhi.

But they do not levy such terminals, say, on traffic interchanged with the Oudh and Rohilkhand Railway *viâ* Aligarh, *viâ* Moghal Sarai or *viâ* Allahabad, or with the Bengal and North-Western Railway *viâ* Digha Ghat, *viâ* Mokamehghat, *viâ* Tari Ghat, *viâ* Bhagalpur.

Therefore, the same remarks as made in the case of Bengal Nagpur Railway terminals on Bombay traffic apply to East Indian Railway terminals on Bombay traffic, but the East Indian Railway rates for grain are lower than those of the Bengal Nagpur Railway.

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* The East Indian Railway are withdrawing this terminal.

Preferential Rates on Indian Railways.

Next let us take the Great Indian Peninsula cotton rates to Bombay.

Distances to Bombay	Stations from	Special rates to Bombay.	Ordinary rates to Bombay.
		Rs. A. P.	Rs. A. P.
493	Hingan Ghat	1 0 2	1 13 5
413	Badnera	1 4 8	1 12 0
419	Amraoti	1 4 7	1 12 5
363	Akola	1 6 2	1 8 8
341	Khamgaon	1 4 11	1 7 3
386	Murtazapur	1 5 7	1 10 3
333	Jalamb	1 4 6	1 6 8
472	Wardha	1 2 5	..
520	Nagpur	0 14 1	1 13 5
310	Sheagaon	1 4 11	1 7 2

These rates may be discussed from various points of views. In the first place, it may be argued that while, for instance, the rate from Akola to Bombay 363 miles is Rs. 1-6-2 that from Nagpur to Bombay 520 miles is Re. 0-11-1. Amraoti and Hingan Ghât despatchers may bring forward similar arguments and add that the traffic given to the railway by any one of these stations, for which the rates are higher, is bigger than that from Nagpur. The position of the Great Indian Peninsula is that they did not want to reduce the rate from Nagpur to Bombay and would be glad to enhance it *pro rata* to the rates from stations nearer Bombay, but they will say that they are not in a position to do so.

Therefore, the position is that the Great Indian Peninsula Railway make higher charge for shorter than for longer haul of traffic in the same direction, or in other words, the traffic carried for a whole distance is charged less than traffic carried for a part of the distance. Whether such a position creates undue preference or not will be for the decision of Railway Commissioners, but it cannot be wholly said that the rates are same under equal conditions from the point of view of the public.

Equal traffic conditions may be said by the public to exist from both Akola and Nagpur to Bombay, but the railway may urge that the conditions are not equal because in one place the rates have been lowered for the reason that but for the rate they would lose the traffic at Nagpur, whereas in the other cases, such as Akola, Badnera, etc., the rates are such as the traffic can bear.

If the rates were based from the point of view of what it will cost to haul the traffic, leaving a fair margin of profit, there would be, in the eyes of the public, no reason to make the Nagpur rate cheaper, but the Great Indian Peninsula Railway argument will be that as through trains run from Nagpur to Bombay with coal and grain there is less cost in hauling one or two wagons of cotton attached to such trains and the only detaching and attaching that such wagons would require would be at Dadar, when the wagons would have to be taken off the grain or coal trains, and sent by one of the cotton trains of the Great Indian Peninsula that run over the Bombay, Baroda and Central India Railway rails from Dadar to Colaba. But this argument will lose its weight if a comparison was being made, say, between the rates of Wardha and Murtazapur. Both are road side stations and the traffic is forwarded under same conditions as to quantity, wagon load, etc., and yet the Wardha rate is lower for a longer distance as compared with the Murtazapur rate for a shorter distance. Wardha rate is at a smaller figure because it is nearer Nagpur, the junction between the Great Indian Peninsula and Bengal Nagpur Railways, and thus influenced by the special reduced rate quoted by this latter line for the Calcutta port.

For the Great Indian Peninsula Railway to make the position such as will obviate the necessity for having a higher charge for a short haul than for a long haul in the same direction will require either

(1) that the Bengal Nagpur Railway should cancel their rate of $\frac{1}{7}$ pie to Calcutta from Nagpur and *via* and increase it to $\frac{1}{2}$ pie per maund per mile, the ordinary rate for cotton, or

(2) that the Great Indian Peninsula should be prepared to lose at least a portion of the traffic from the Nagpur area to Bombay and raise the rates to the level of those such as Akola, Murtazapur.

If suggestion (1) is carried out the cotton mills in Bengal will say that they will have to pay comparatively higher rate of freight than they do at present, but it is doubtful whether this will be the result of raising the price. Whereas if suggestion (2) is given effect to, it will have the effect of raising the railway freight considerably to Bombay—a position which the Bombay Mills will certainly object to, if it is created simply to place the Wardha, Murtazapur, Akola despatchers on an equal footing with the despatchers from Nagpur to give the former the benefit of their geographical position. Therefore, what will suit the sellers at say Murtazapur will not suit the consumers in Bombay (*viz.*, the Bombay Mills).

The other alternative will be to reduce the rates from all stations on the Nagpur Bhusaval section at least to the level of the Nagpur rate in order to remove the anomaly of higher rates for shorter hauls than for longer hauls.

Apart from the question of lower rates from Nagpur and Wardha constituting undue preference, if the question is treated on the basis of what the traffic will bear, the discussion may be as follows :—

If the rates for stations in the Berar, where the cotton traffic is the largest, are reduced to the level of the rates in the Central Provinces (Nagpur, Wardha, Hingan Ghat), it will be noticed that the rates from Amraoti, Akola, Murtazapur, Badnera, Khamgaon, Shegaon, Jalamb, will have to be reduced to Re. 0-11-1, the rate from Nagpur to Bombay. Taking Akola, the highest rate, it will be seen that the reductions will be Re. 0-8-1 per maund. It is doubtful whether this will effect any reduction in the price of a commodity like cotton, which fetches at the despatching stations in Berar Rs. 20 to Rs. 27 per maund (if there is any reduction in the price at all the loss in the railway freight will be more than 40 per cent).

The average price of ginned cotton during the following years in Berar was as follows :- -

	Per maund.		
	Rs.	A.	P.
1908	18	3	2
1909	20	6	0
1910	26	5	8
1911	27	11	0
1912	25	12	4

With such fluctuation in prices varying from Rs. 18-3-2 to Rs. 27-11-0 per maund in 5 years a reduction of Re. 0-8-1 per maund will have hardly any effect, and the matter for consideration is whether the discrimination cannot be removed by the rates from all stations between Nagpur and Akola being increased to Rs. 1-6-2 per maund and whether the Bengal Nagpur Railway cannot also increase their rate to Calcutta.

What the Bengal Nagpur Railway do in the matter of grain rates to Bombay the Great Indian Peninsula Railway do precisely the same in connection with the rates for cotton to Calcutta. The recognised practice throughout the railway world is that the through rate to a junction should not be higher than the local rate to the junction. Nagpur is a junction between the Great Indian Peninsula and the Bengal Nagpur Railways; while the local rate for raw cotton (full pressed) from say Pachora to Nagpur is Re. 0-13-10 per maund, the rate from Pachora to *via* Nagpur (for the cotton mills, say in Rajnandgaon on the Bengal Nagpur Railway, or in Calcutta) is Re. 0-14-4 pie per maund. It will thus be seen that the local rate to Nagpur is 6 pies per maund lower than the through rate *viâ* Nagpur, and lest advantage is taken by the Calcutta or Rajnandgaon mill owners by re-booking at Nagpur to obtain the benefit of the low local rate the Great Indian Peninsula notify that the special rate to Nagpur applies when traffic is consigned to the local mills only.

It is, however, noticed that the Bombay, Baroda and Central India Railway rates to competitive railways and ports are not particularly high. For instance, Rudain is a station on the Cawnpore Achnera Section of the Bombay, Baroda and Central India Railway. It is 114 miles from Cawnpore and the rate for grain from Rudain to *viâ* Cawnpore is Re. 0-2-5 per maund. If the Bombay, Baroda and Central India Railway wanted to charge their maximum rates and the high terminal, following the example of the Bengal Nagpur Railway or Great Indian Peninsula Railway or the East Indian Railway, they could have levied a rate of Re. 0-3-8 per maund, but they were apparently satisfied with a rate of Re. 0-2-5 and this (prior to October 1916) made the rate from Rudain to Howrah Re. 0-7-8 against Re 0-9-0 the rate to Bombay. If the Bombay, Baroda and Central India Railway wanted they could have made the rate to Bombay Re. 0-7-4 ($\frac{1}{10}$ pie for 878 miles) and the rate to Howrah Re. 0-8-11 (maximum for 114 miles Rudain to Cawnpore *plus* 6 pies terminal=Re. 0-3-8 *plus* Re. 0-5-3 East Indian Railway minimum rate from Cawnpore to Howrah).

Similarly their rate on grain, say, from Sirsa to *viâ* Delhi, 192 miles, is Re. 0-4-4 per maund which works out to ·27 pie per maund per mile, and this rate applies on traffic to Calcutta port. For similar distances the Bengal Nagpur Railway rate to *viâ* Nagpur for traffic in grain to Bombay works out ·38 pie per maund per mile. In regard to rates from the Bombay, Baroda and Central India to Karachi it is well known that they cannot be manipulated against that port in competition with Bombay as such an action can be prevented by the Government in terms of their contract with the Secretary of State for India.

Like the East Indian Railway rates to Howrah the Bombay, Baroda and Central India Railway rates to Bombay are not generally higher for short than for long distances as the following illustrations of grain rates will shew :

Miles.		Rs.	A.	P.
1,059	Fazilka to Bombay	0	10	10
885	Hissar to Bombay	0	10	2
848	Delhi to Bombay	0	8	11
828	Gurgaon to Bombay	0	8	9
796	Rewari to Bombay	0	8	9

It is true however that the mileage rate in the case of Delhi, 848 miles, is ·12 per maund per mile, whereas the mileage rate from Hissar to Bombay, 885 miles, is ·138 per maund per mile, which is contrary to the principle that as the distance increases the mileage rate should become lower.

*This, however, is due to the Delhi Bombay rate having had to be lowered owing to the rate from Delhi to Howrah being 0-9-4 for 904 miles

Apart from the fact of such differential rates being in existence on traffic to and from ports, differentiation also exists between two intermediate points of a longer route, equalising between two further points of that route with a shorter route. As for example, the rate for grain over the Bombay, Baroda and Central India Railway between Cawnpore and Bawni-Khera (448 miles) is Re. 0-6-10, whereas the rate between Cawnpore and Hansi, which is 11 miles beyond (*viz.* 459), the rate is Re. 0-6-4. On the same railway while the charge on grain from Khalilpur to Agra Fort (184 miles) is Re. 0-1-5 the rate from Garhi Harsaru to Agra Fort 205 miles on the same route is Re. 0-3-11, or the difference in the rate per ton is Re. 0-13-7 for a shorter haul of 21 miles. Rates of this nature have been quoted on various lines for almost every important commodity and will be discussed in Part II of this book.

In the case of grain rates to Bombay over the Great Indian Peninsula Railway the charges are found to be higher as the distances to Bombay decrease as follows :—

I.—Stations on the Jubbulpore branch.

Miles from Bombay.		Rs.	A.	P.
616	Jubbulpore to Bombay	0	7	0
564	Narsinghpur to Bombay	0	8	6

II.—Stations on the Manikpur branch.

859	Chitrakot to Bombay	0	7	4
821	Banda to Bombay	0	8	5
788	Mahoba to Bombay	0	9	1

III.—Stations on the main line on the section Agra to Jhansi.

830	Bhandai to Bombay	0	8	7
804	Dholpur to Bombay	0	9	4
795	Hetampur to Bombay	0	9	7
763	Gwalior to Bombay	0	10	3

For stations on the same section and for traffic in the same direction the charges become higher to Bombay as the distance decreases. There are reasons for the rates from, say, Bhandai, Chitrakot or Jubbulpur to be lower owing to competition with Calcutta. Bhandai is a station east of Agra and so is Chitrakot close to Manikpur, junction with the Great Indian Peninsula Railway, but the reasons for rates from Mahoba and Gwalior to be higher than those from Banda and Hetampur respectively are not very clear.

Similar instances are also seen in the local rates other than those to and from the ports, for instance in the rates for cotton from the Berar to say Agra and Cawnpore.

Miles.		Rs.	A.	P.
673	Murtazapur to Agra	1	8	3
727	Dhamangaon to Agra	1	5	8
705	Amraoti to Cawnpore	1	8	0
673	Murtazapur to Cawnpore	1	8	3
649	Akola to Cawpnore	1	8	6

In the case of Dhamangaon and Amraoti these stations are nearer to Nagpur (from which there are alternative routes to Agra and Cawnpore) than either Murtazapur or Akola and this accounts for the disparity in rates, but in the case of, say, Cawnpore rates there is no reason why all the three rates quoted above could not be made into a group rate of Rs. 1-8-6 per maund.

The Oudh and Rohilkhand Railway rates are less favourable to Bombay than to Calcutta or Karachi. In the case of Calcutta there are special reasons for the traffic to be treated liberally on account of load having to be found for return empty wagons *viâ* Moghal Sarai, but for Bombay and Karachi the conditions appear to be the same unless the Oudh and Rohilkhand Railway wagons going to North Western Railway are back loaded with Khewra Salt in large numbers.

The rates from the Oudh and Rohilkhand Railway up to its junctions with the Calcutta, Bombay and Karachi lines are as follows; only two cases have been cited in the way of illustration.

Viâ Saharanpur for Karachi.	*Viâ* Cawnpore for Bombay.	*Viâ* Moghalsarai for Calcutta.
Ruzagaon to Saharanpur for 375 miles Re. 0-3-11.	Shuipur to *viâ* Cawnpore for 205 miles Re. 0 4-1.	Chandausi to *viâ* Moghalsarai for 387 miles Re. 0-1-4.
Hardoi to *viâ* Saharanpur for 259 miles Re. 0-4-0.	Shahganj to *viâ* Cawnpore 188 miles only Re 0-4-3	Hardoi to *viâ* Moghalsarai for 261 miles Re. 0-4-2.
	Hardoi to *viâ* Cawnpore for 108 miles Re. 0-3-1.	

Whereas in the case of Bombay the rate of about Re. 0-4-0 is charged for a lead of 205 miles, the same rate (rather a lower rate of Re. 0-3-11) is leviable on despatches to Karachi for lead of 375 miles, and there are several instances of this nature. But anyhow, the Oudh and Rohilkhand Railway rate of Re. 0-3-1 from Hardoi to *viâ* Cawnpore for 147 miles is not higher than ¼ pie per maund per mile, which is a low rate compared with what the Great Indian Peninsula charge on grain to Calcutta up to its junction for similar leads or the Bengal Nagpur Railway charge on Bombay traffic *viâ* Nagpur, and this shews that the Oudh and Rohilkhand Railway rates are not very unreasonable to Bombay.

In connection with the North Western Railway grain rates to Karachi, so recently notified as in June 1917, it is observed that there are differences of the following nature—while, for instance, the rate from Jullundur City to Kurachee for 802 miles is Re. 0-11-3 per maund, that from Phagwara for 816 miles is Re. 0-11-1 or lower for a greater distance. Then, again, while the Jullundur rate for 802 miles is Re. 0-11-3 the rate from Ludhiana 806 miles, or 4 miles longer distance, is Re. 0-10-10 or 5 pies lower. Cases of rates for long hauls lower than for short hauls will be found in the tariffs of every railway, and whether the passing of a law similar to that exists in America or in England is necessary in the interests of the public is a question for consideration.

In the case of Karachi a special provision has been made in the Bombay, Baroda and Central India Railway contract that the Railway Board may at any time require the Bombay, Baroda and Central India Railway to quote over that Railway system such rates in respect of the conveyance of passengers and goods to and from both the ports of Bombay and Karachi as to secure the carriage of trade to and from such ports on equal terms, and it is further provided that the Railway Board may require the quotation of a rate from stations of consignment to destination whether the route is entirely over the undertaking or whether the route is only partly over the undertaking. The Bombay, Baroda and Central India Railway have also in respect of traffic originating on their metre gauge system, to quote the same rates to Karachi *viâ* the Jodhpur Bikaner Railway and the North Western Railway and to accept mileage division of rates and are not allowed to charge block rates to Karachi, but this is the only instance where such a position exists.

The uniform maxima and minima rates have been fixed in order to treat all the railways and all interests fairly and alike, but so long as similar provision as has been made in the case of Karachi rates in respect of traffic to and from the Bombay, Baroda and Central India Railway, is not made for instance in regard to traffic, say, from the East Indian Railway, the Oudh and Rohilkhand Railway and the Bengal Nagpur Railway to Bombay or from the Great Indian Peninsula Railway to Calcutta, it cannot be said that all the ports and all concerns have been treated alike.

Further whereas in the case of some lines, as will be seen from Chapter VI the Government of India have the absolute power to decide whether a rate constitutes undue preference or not, they have not got similar powers in respect of other lines. For instance, whereas the Government can decide absolutely and finally whether the rates of the Assam Bengal or the South Indian Railways constitute undue preference or not and can order cancellation of such rates, they cannot do so in respect of the East Indian, the Madras Railway or the Great Indian Peninsula Railway.

CHAPTER IV.

THROUGH RATES OVER TWO OR MORE CONTIGUOUS RAILWAYS.

Through rates in India, in the absence of special lump sum rates agreed to between railways (and also excepting in the case of coal, railway materials, parcels and luggage rates), are generally made up of sum of local rates of two or more railways.

Dealing with the matter of through rates, in their circular No. 1446 of 1887, the Government of India expressed the following views and this is the only authority in India in this connection. This circular was published for the information of the public in the Gazette of India.

Views of the Government in 1887 in the matter of through rates.

"In cases where the traffic offering is sufficient to justify this arrangement, Railway administrations must give reasonable facilities for public traffic between any two Railway stations, each Railway administration being contended to receive for its share of the through rate less than the ordinary rate," and in the contract between the Railway Companies and the Secretary of State it is provided that the Government of India may from time to time, when considered necessary for the convenience of the public, require a Railway Company to enter into agreements upon reasonable terms for "the settlement and apportionment of through rates and charges for traffic."

Further, in fixing the maximum and minimum rates for the East Indian Railway, the Government of India in their Circular No. 749 R. T. of 21st October 1890 laid down as follows:—

"Such lower rates as may obtain on the company's system for long distance traffic should in through booking with foreign lines, be calculated as if the goods were carried over the East Indian Railway locally," but subsequently the Government of India, in their Resolution No. 369 R.T., dated 14th May 1891, said that they "had no desire at present to press this point."

In the matter of through rates between two railways the Government intentions of the provisions in the Act have been described in the report of the late Mr. T. Robertson, C.V.O., Special Railway Commissioner for India to be as under:—

Views of the Special Ry. Commissioner, who came out to India in 1901, in the matter of through rates on Indian Rys., as ex-

"On through traffic, that is traffic going over more than one company's line, all fares and rates should be calculated on the through distance (this is really expected by the Railways Act, but in practice is rarely done), and the reduction should always be applied on the entire distance and not merely on the local distance of each railway. It is the practice that prevails in India of calculating rates on the distance to the junction only, which is to some extent responsible for a good

many of high rates now obtaining, since the traffic only gets the benefit of sliding scales of rates on the local distance to the junction, instead of on the whole distance that the traffic is carried. But if the long distance traffic is to be developed in the manner that such traffic has been developed in America, the distance must be taken from the station of origin to the station of destination, and the charges calculated on this through distance at the reduced rate."

pressed in his report published in 1903.

The law relating to application of through rates is as follows which forms section 42 (4) of the Indian Railways Act IX of 1890 :—

"The facilities to be afforded under this section shall include the due and reasonable receiving, forwarding and delivering by every railway administration, at the request of any other railway administration of through traffic to and from the railway of any other railway administration at through rates. Provided as follows :—

Law in the matter of through rates.

"(*a*) The railway administration requiring the traffic to be forwarded shall give written notice of the proposed through rate to each forwarding railway administration stating both its amount and its apportionment and the route by which the traffic is proposed to be forwarded. The proposed through rate for animals or goods may be per truck or per maund ;

"(*b*) each forwarding railway administration shall, within the prescribed period, after the receipt of such notice, by written notice, inform the railway administration requiring the traffic to be forwarded whether it agrees to the rate, apportionment, and route and if it has any objection, what the grounds of the objections are ;

"(*c*) if at the expiration of the prescribed period no such objection has been sent by any forwarding railway administration, the rate shall come into operation at the expiration of that period ;

"(*d*) if an objection to the rate, apportionment or route has been sent within the prescribed period, the Governor-General in Council may, if he thinks fit, on the request of any of the railway administrations refer the case to the commissioners for their decision ;

"(*e*) if the objection is to the granting of the rate or to the route, the commissioners shall consider whether the granting of the rate is a due and reasonable facility in the interests of the public, and whether regard being had to the circumstances, the route proposed is a reasonable route, and shall allow or refuse the rate accordingly or fix such other rate as may seem to the commissioners to be just and reasonable ;

"(*f*) if the objection is only to the apportionment of the rate, and the case has been referred to the Commissioners, the

rate shall come into operation at the expiration of the prescribed period, but the decision of the commissioners as to its apportionment shall be retrospective; in the case of any other objection, the operation of the rate shall be suspended until the Commissioners make their order in the case;

"(g) the Commissioners in apportioning the through rate shall take into consideration all the circumstances of the case, including any special expense incurred in respect of the construction, maintenance or working of the route or any part of the route, as well as any special charges which any railway administration is entitled to make in respect thereof;

"(h) the commissioners shall not in any case compel any railway administration to accept lower mileage rates which the administration may for the time being legally be charging for like traffic carried by a like mode of transit on any other line of communication between the same points, being the points of departure and arrival of the through route;

"(i) subject to the foregoing provisions of this sub-section, the Commissioners shall have power to decide that any proposed through rate is due and reasonable notwithstanding that a less amount may be allotted to any forwarding railway administration out of the through rate than the maximum rate which the railway administration is entitled to charge and to allow and apportion the through rate accordingly."

The foregoing clauses of the Indian Railways Act are practically reproductions from sections 25 and 26 of the Railway and Canal Traffic Act of England.

The only difference between the English and the Indian law is that while in England both a customer and a Railway administration can call upon another railway administration for a through rate, in India a railway administration alone can call upon another Railway for a through rate.

The English and the Indian Law and decisions and opinions as to intentions of the English Law, which is practically the basis of the Indian law in the matter relating to through rates.

According to English law any customer desiring his traffic to be carried at a through rate is competent to apply to the Board of Trade under the terms of Section 25 of the Railway and Canal Traffic Act of 1888 for a through rate, but in India customers have no such right, and it was also decided in England that as between railways in asking for a through rate "it need not be the forwarding Company even if the Company has some interest in the forwarding of the traffic" it can ask another Company or Companies for a through rate.

As to the extent and scope of the law herein referred to, it can only be judged from the cases decided in the United Kingdom of which particulars are available in this country. In the following paragraphs therefore some of the decisions of the courts in England from time to time are given below :—

"A route is not unreasonable because it is proposed to hand over to the receiving company at a point only a few miles from its destination although such company could receive it at a point further distant from its destination."

* * * * * *

"The Railway Commissioners, however, will consider not only the public interest, but also the right of a railway company to a long run in respect of traffic originating on its own system."

* * * * * *

"The mode of apportioning through rates between railway companies is generally to divide by the mileage, after deduction of the terminal charges and as a general rule, however, it is reasonable that when a railway company has a very short distance, it should have more in proportion."

It was also held in the case of Great Northern Railway Company (Tr.) V Belfast Central Railway Company (3 R. and Cay Tr. Cas 411) that "while adjusting their rates, railway companies must do so not only with reference to their own interests but of other Railway Companies."

Indian Railway practice in connection with through rates.

In connection with the quotation of through rates in India, there are special through rates in existence for instance :—

(1) between Oudh and Rohilkhand Railway stations and Howrah (Calcutta);
(2) between the Bengal and North-Western Railway stations and Howrah (Calcutta);
(3) between the Southern Maharatta Railway stations and Bombay;
(4) between the Nizam's Guaranteed State Railway stations and Bombay;
(5) from the Rohilkhund and Kumaun Railway and the Rajputana-Malwa Railway stations to Karachi and *vice versâ*.

There are also other points where such through rates are arranged, and in cases like this the through charges are divided on mileage between the two lines, except that when one of the two lines has a shorter lead such railway is allowed a slightly higher mileage rate in the way of an extra charge of 3 or 4 pies added to its proportion out of the proportion of the railway having a longer haul.

But in all other cases, the sum of local rates of two or more railways form through rates. In the case of long distance traffic, even when such traffic may be for a fairly long distance, say, 400 miles and more, and may give two railways the same lead (*viz.*, 200 miles to each), it cannot get the advantage of low rates on the through distance.

If, for instance, oil-cake is booked from a station on the East Indian Railway to a station on the Bombay, Baroda and Central India Railway and is hauled for distances of 200 miles over each line, the charges would be on the following scales of rates over the two railways :—

Over the East Indian Railway.

	Per maund per mile. Pie.
For first 50 miles	·33
For extra distance 50 to 100 miles	·20
101 to 350 miles	·14
350 to 600 miles	·12

Over the Bombay, Baroda and Central India Railway.

1 to 100 miles	·33
101 to 300 miles	·20
301 to 500 miles	·10

At these rates the charge over the East Indian Railway will be Re. 0-3-5 per maund and over the Bombay, Baroda and Central India Railway Re. 0-4-5 per maund for 200 miles respectively thus making up a total of Re. 0-7-10 for 400 miles. It will be observed that the traffic, after being carried over the East Indian Railway for 200 miles and getting the benefit of ·20 pie rate for distances 51 to 100 miles and of ·14 pie rate from 101 to 200 miles over that line will have to start again on the Bombay, Baroda and Central India Railway at ·33 pie for the next 100 miles and at ·20 pie for the remaining 100 miles. This undoubtedly increases the rates, owing to the "telescopic" or "tapering" scale of rates not applying on through distance. If the same traffic is carried over the East Indian Railway for 400 miles the total rate would be Re. 0-5-8 against the rate of Re. 0-7-10 for 400 miles, when the distance is over two railways.

According to Mr. Priestley's Report it would appear that in America the telescopic scale of the forwarding railway would apply throughout the entire distance, whether over one or more railway.

The practice in force on Railways in France has been said to be, in Colson's "Transports E. T. Tarifs," translated by Charles Travis, that the "establishment of through rates is brought about for all currents of tariffs, some times for scales with decreasing base and sometimes for special rates, as if the different interested systems constituted one system."

It is particularly pointed out in this book by Travis, that "even when two railways apply the same scale to particular traffic the fact of merging the rates into a through scale charge brings about some notable reductions, for instead of restarting from the initial base at the point of junction the decrease applies on the whole distance."

CHAPTER V.

EXTERNAL AND INTERNAL TRADE.

Complaints have been made from time to time that some railways charge relatively high rates for raw materials required by Indian mills, factories and industries as compared with the rates charged to the ports for similar descriptions of traffic for export in their raw condition.

Discussion in the Imperial Legislative Council in India in 1912.

Sir Vithal Dass Thakersay, in his speech in the Imperial Legislative Council meeting held in Calcutta on 1st March 1912, in moving his resolution for the appointment of a committee of enquiry to be held to investigate the policy followed by railways in fixing of goods tariffs and its effects on development of Indian industries or on inter-provincial traffic, quoted several cases of such rates. He drew attention, for instance, to the cotton rates of the North Western Railway as being lower to Karachi than to Delhi. The rates to Delhi and *viâ* not only concern the cotton mills in Delhi but also mills in the United Provinces, which may want to use Punjab cotton. The North Western Railway cotton rates to Karachi have recently been revised, and taking the following stations, the Railway risk rates for "full pressed" cotton are as follows to Karachi and Delhi; (while the rates to Karachi are special rates, those to Delhi are ordinary class rates).

Distances to Karachi.	Rates to Karachi.			Cotton despatching stations.	Distances to Delhi.	Rates to Delhi.		
Miles.	Rs.	A.	P.		Miles.	Rs.	A.	P.
576	1	0	9	Multan . . .	454	1	3	2
684	1	3	9	Lyallpur . .	387	1	0	5
673	1	3	5	Abbaspur . .	396	1	0	9
625	1	2	1	Chutiana . .	414	1	2	9
607	1	1	7	Darkhana . .	454	1	3	2

The rates from Multan, Chutiana and Darkhana are lower for longer distances to Karachi than those for shorter distances to Delhi; from Lyallpur and Abbaspur the rates to Delhi are also relatively higher per maund per mile than to Karachi, but this is not unfair.

In England, the law provides that there should be no difference between the rates charged for home or foreign merchandise in respect of same or similar services, and the British Railways may, at any time, be required to justify, before the permanent commission, any difference between such charges.

Reasons for existence of low rates to the ports on English lines, which conditions generally do not exist in India.

The main ground of justification put forward by the British Railways in favour of special railway rates to and from ports, as stated in the evidence before the Departmental Committee of the Board of Agriculture and Fisheries in 1906, was that such rates were due to competition, and that if they were not quoted the traffic would go by canal.

For instance, it was pointed out that between Hull and Leeds there were three railways, but what was more effectual than all was water competition by canal. But this factor is absent in respect of traffic from most of the internal stations of the Indian Railways to the ports.

Then, another reason for the rates of English railways to and from the ports being cheaper was stated to be as follows: "the ports were also used for distribution throughout the country of local merchandise, traffic being brought to the ports by the agency of the railways and then taken from port to port by water in competition with railway carriage." This is a condition which does not prevail for a very large portion of the port traffic of the Indian Railways, nor is this one of the reasons for the rates to the ports being lower, except from stations on the Sea Coast on the Bengal Nagpur, Madras and Southern Mahratta and South Indian Railways; also the rates to Calcutta from a few East Indian Railway riverside stations and from Surat and other stations on the sea coast on the Bombay, Baroda and Central India Railway to Bombay are influenced by water competition.

It was also pointed out by English Railway Managers that it was possible for foreign produce required for consumption in England to be taken to many places direct by water and in other places partly by water and partly by rail, and that in such cases if the railway rates to and from the ports were enhanced the British farmers would not be benefited, for foreign produce would yet continue to find transportation at cheap rates by other means of transport. But this condition does not apply (except in a few cases) to low rates on Indian Railways, for cotton or grain to the ports, or for sugar, piece goods, iron and other imported commodities, from the ports to the interior.

There would, however, be justification for special rates for cotton to the Bombay Port on the ground that such rates are largely taken advantage of by numerous cotton mills in Bombay, but there are no cotton mills in Karachi. There are, however, some shipments of cotton from Karachi to Bombay. In the same way there are flour and oil mills at the ports, and these get the advantage of the low export rates, which the mills in the interior do not get.

The sugar industry of India has been receiving a great deal of attention on the part of the Government, and the heavy imports of Java sugar are not in the interests of the sugar industry of the country. The rates for sugar from the ports to the interior were first reduced during 1904, just a year before the Calcutta and Bombay competition started. They were further lowered during the competition in 1905. It is during the last 10 years that Java sugar has found an extensive sale in this country. Java sugar is produced very cheap. The prime cost of sugar in Java was given at Rs. 4-2-0 per maund, the cost of producing superior white sugar, including all expenses, was said to be Rs. 4-9-2 per maund; and even taking interest on capital the total would come to Rs. 5 or Rs. 5-8-0. It compared very favourably with the minimum price of Java sugar in Calcutta which was at Rs. 11-4-0 per maund before the war. So that Java made handsome profits out of sugar exported to India. The steamer freight was then but a fraction of the latter figure (*viz.*, Rs. 11-4-0 the price in Calcutta). It is questionable, therefore, whether this traffic ever needed further subsidy in the way of cheap railway rates that were quoted from the ports to the interior. Even if the rates for Java sugar were maximum rates the railways would not have lost the traffic, but the profits of the Java producers would have been less.

The reduction in their profits would have been the gain of the Indian Railways, and consequently to the revenues of India.

Low rates for imports.

It may be argued that Railways are able to quote relatively lower rates of freight for imported traffic from the ports, which was said as a rule to be carried for long distances in full wagon loads, thus indicating that it is cheaper for railways to carry such sugar than it costs them to carry indigenous sugar, which, it is asserted, is carried for shorter distances in less than wagon loads. This is not, however, always the case, and *it may be observed that the special rates for sugar from the ports of Bombay and Calcutta were not for wagon loads but for actual weight*, i.e., *carried in any weight, however small or however large.* The condition as to weight appears to have been waived in many cases in order to enable despatches in imported sugar being made from the ports to small stations which cannot afford a wagon load. Stations, such as Markundi on the East Indian Railway, Dabtara and Dhanari on the Oudh and Rohilkhand Railway, have special rates for imported sugar from the ports, *irrespective of weight and at Railway Risk.* Distance for distance these rates are in many cases lower than the rates even *for wagon loads of* indigenous sugar carried *at owner's risk.*

Further, it may also be said that railways get loads for wagons returning from the ports, after discharging produce, by encouraging traffic in imports from the ports to the interior and that from the point of view of cost of operation imported traffic can be given low rates.

This is a very reasonable and powerful argument on the part of railways, which are run as commercial concerns. The imported traffic helps the railways to fill up wagons, which would otherwise return empty, and such traffic is thus carried practically at a nominal cost and, therefore, at a large profit to the railway.

But the public side of the case is that in instances where the local industries of India are affected by the imports whether it is right for railways, owned by the Indian Government, to encourage imported traffic by low rates, which are not allowed on similar goods locally produced in India. And another point is, did the imported traffic require the lower rates? They apparently did not, and the low rates were introduced mainly on account of competition, as admitted by the railways at a meeting in 1905, when the representative of the premier railway in India admitted that the reductions were not called for by the trade.

Let us take one or two concrete cases. The East Indian Railway have a telescopic scale rate for both sugar and jagree carried in wagon loads of 270 maunds and at owner's risk. At this scale of rate the charge on sugar from Howrah to Sutna (615 miles) would be Re. 0-12-0 per maund, but there is a special rate of Re. 0-8-11 per maund from Howrah to Sutna for sugar from Calcutta at owner's risk but on actual weight, whereas if locally produced sugar is carried to thus station in wagon loads at owner's risk from say 557 miles, the rate would be Re. 0-9-10 per maund.

In the case of the East Indian Railway, and the Calcutta port in particular, it may be pointed out that it will be more economic for the railway to quote special rates to encourage despatches of sugar from upcountry (Behar and United Provinces) to Calcutta than from Calcutta to upcountry for the reason that the empty running of wagons is considerably greater in the direction of Bengal than in the opposite direction. Recently, the East Indian Railway have made a move in this direction in the matter of scale rates for sugar, but the special low rates from Calcutta to certain important centres remain.

If the railways will at least make the Special rates for imported sugar from the ports, applicable in wagon loads, a great deal of the complaint of preferential tariff in favour of the foreign produce will be minimised.

Sir Vithal Dass in his speech in the Council, previously referred to, also drew attention to the sugar rates to and from Cawnpore. While, for instance, the Great Indian Peninsula Railway rate from Bombay to Cawnpore, 810 miles, is Re. 0-13-8 in favour of the imported commodity, the rate from Cawnpore to Khandwa, on the same line, for a distance of 486 miles only, or nearly half the former distance, is also Re. 0-13-8, whereas at the same time the rate from Bombay to Jubbulpore, 616 miles, was Re. 0-8-10 per maund, on the same line of railway against Re. 0-12-11 for Sohagpur, 494 miles.

On the North Western Railway also there are special rates for sugar in small lots, *i.e.*, on actual weight, from Karachi to certain stations, which in one or two cases, work out to less than $\frac{1}{5}$th pie per maund per mile, and in others between $\frac{1}{4}$th and $\frac{1}{5}$th pie, but there are no special rates for sugar in small lots from either Gurdaspur or Amritsar, where, according to Government of India's published list of factories and other large industries, there are sugar works. The despatches in small lots from these places have to pay the ordinary 1st class rate of $\frac{1}{3}$rd pie, and on some railways the rates for jagree (gur, raw sugar) are higher per *mile than the rates for the imported refined sugar for equal distances. Jagree or 'Gur" is one of the important items of food of the mass, and in the report of the "Enquiry into Rise of Prices" it is stated that this stuff is very much in demand by the poor. Gram and gur in the United Provinces and in Behar, and parched rice and gur in Bengal,* form the chief food of the agricultural labourers in the morning. It therefore seems that jagree deserves a lower scale of rate than sugar.

There is another industry, in which there are great expectations, *viz.*, the vegetable oil milling industry. In this connection the Director of Industries, United Provinces, not very long ago wrote as follows :—

Rate. Indian Industries.

"There is a chance of a better yield of oil and of a better quality, because when crushed fresh, the oil cells yield their oil more readily in a warm climate than in cold. Here again we have the factors in favour of manufacturing the oil locally, seed available on the spot and a climate more favourable than that of Europe for the purpose of manufacture.

* * * * *

"The markets, which have hitherto received their supplies of cake from the oil presses of Europe and the East can be supplied from the surplus cake which will be available here."

"We exported from the provinces during the year 1913-14 a total of 11,609,672 maunds of oil seeds 426,512 tons of a value of Rs. 5,79,32,700 or £3,862,180, all to be used for the extraction of oil."

"Even if half the oilseeds grown in the provinces were crushed locally it would provide work for 800 mills of the size of the Premier oil mills of Cawnpore working 24 hours daily throughout the year; and it would be possible to use cake more freely, in some cases as cattle food and in others for manure, perhaps, thus compensating the soil for some of the fertility taken from it. At present we take everything from the land and give back nothing, an economic drain akin to living on one's production."

It is expected that with linseed, lac, turpentine and resin available in the country, India will some day have industries in varnish and paint making, but for the present the linseed crop is described "as a gift to the Indian agriculturist from the west, which represents a contribution to the earnings of the Indian Cultivators of £3½ millions," as the percentage of exports of linseed to productions is very big, linseed oil being manufactured in India to a small extent only.

The East Indian Railway Carriage and Wagon Department are painting their wagons with paint manufactured in their Lilloah (near Calcutta) shops. Laterite and burnt clay are ground fine, and then well mixed with liquid Hydrocarbon (waste product of coal, used in gas making in the carriage and wagon shops of the East Indian Railway) and linseed oil. So that if the price of linseed oil is low, the paint industry in India can be a good source of income to the people.

For oil carried at owner's risk the rate charged is ⅓rd pie per maund per mile.

There are also special rates for oil despatched in wagon loads; the charge on oil from Cawnpore to Calcutta is about Re. 0-12-0 per maund or equal to ·22 pie per maund per mile.

Then comes the flour milling industries of India. It should be the aim of the country to export as much flour as possible instead of all wheat. America has always thought that as far as possible flour, instead of wheat, should be exported, but it is not possible for a big wheat growing country like America or India to send all flour and no wheat. America has probably done a great deal in the direction of exporting more and more flour, as will be seen from the following remarks appearing in Sir James Wilson's memorandum on Indian wheat for the British Market, published in 1910:—

"The Eastern ports of the United States now practically export only flour."

Canada also during recent years has been exporting enormous quantities of flour to the United Kingdom but India has so far sent very little, as will be seen from the chapter on "wheat."

The opinions expressed by medical and other authorities against the use of white bread, which is said to contain less nutritive constituents than the brown bread, have recently engaged the attention of the people in England, and it may be possible that the demand for brown flour may be great in future, and therefore if India uses clean wheat in its flour mills it ought to be able to place its productions in the British Market.

In the case of traffic to and from the mills the railway is ensured, in many cases, of wagon loads in both directions, and the creation of more mills increases the earnings of the railway in many ways. The late Mr. T. Robertson, C.V.O., special Railway Commissioner for India, made the following observations on this point in his report on the Administration and working of Indian Railways:—

"The more numerous the local industries are along a line of railway the greater always is the prosperity of that railway. They not only give their products to carry but their presence makes a great deal of traffic in passenger and goods."

Mills give the railways traffic first in building materials, a regular traffic in coal, traffic in raw products and then in finished or manufactured products, including bye-products as well, such as bran in the case of flour mills and oil cake in the case of oil mills. In many cases the mills import labour and therefore the railways carry traffic, both in goods and in passengers, owing to the introduction of the mills.

The railway rates for flour are not high, but in the case of export they are higher than the export wheat rates on the principle that the rate for raw produce should be lower than the rate for the manufactured article and also because of the difference in the prices, flour being a higher priced commodity than wheat; but as already pointed out flour and oil mills, if made extensively, would benefit the country in many ways, and flour would give as much wagon load as wheat if not better.

The charging of same rates for flour as for wheat and the application of the telescopic scales of rates for flour on through distance are matters for examination and consideration by railways. The particular rates of different railways for wheat and for wheat flour and oil and oil seeds will be discussed in the commodity chapters, as well as rates for sugar, cotton, etc.

In a country like India where the balance of the foreign trade is in favour of the exports of raw produce it is not to the interests of the producer that exports should be discouraged, and until India can find means of using its productions more largely in its manufacturing industries and then of exporting it in a finished state the exports of raw materials cannot very well be discouraged, for it will mean restricting the market for India's products, but at the same time it is claimed by the local industry people that there should be at least no differentiation between the export and the internal rates.

In dealing with the internal trade of the country the following observations were made in the Review of the Inland Trade of India for 1913-14, the official year just preceding the war:—

Port traffic and Inland trade of India.

"The figures are of interest as giving some idea of the extent to which the different parts of the country are concerned in the movements of commodities on a large scale. The great bulk of the traffic, representing about two-thirds of the total trade, flows directly to and from the chief ports, the balance about a third is the trade within British Provinces and Native States, *the trade by rail between the chief ports being of little importance, as will be seen from the marginal table.* The trade between the port towns (other than coasting trade) amounted to 33,000 tons in the first nine months of the year, and consisted mainly of interchanges of foreign cotton piece-goods and hides and skins carried

Rail and river borne trade.	(IN THOUSANDS OF TONS.)		
	Twelve months.	Nine months.	
	1912-13.	1912-13.	1913-14.
(1) Between Port towns and British Provinces and Native States	22,674	17,041	16,522
(2) Within British Provinces and Native States . . .	11,682	8,508	8,017
(3) Between Port towns . .	41	30	33
TOTAL .	34,397	25,579	24,572
Cotton manufactures . . .	284	217	216
Metals, etc.	624	439	516
Kerosene	487	362	376
Sugar	524	407	472
Salt (from Calcutta) . . .	407	300	316
Cotton, raw	502	269	387
Grain and pulse . . .	4,753	3,980	2,649
Oilseeds	1,456	968	1,202
Coal (into Calcutta) . . .	5,819	4,340	4,202
Jute ,, ,, . . .	1,189	927	879
Gunny ,, ,, . . .	227	170	148
Tea ,, ,, . . .	87	81	84
Ore (into Bombay) . . .	598	461	472

between Bombay and Madras ports. The trade of the Port towns in principal articles is shown in the margin. The traffic flowing from the port towns to the interior of the country consists principally of foreign merchandise imported by sea, namely, cotton manufactures, metals and manufactures thereof, kerosene oil, and sugar. In addition to these, railway plant and rolling stock, gunny bags, and salt are despatched from Calcutta. The inward traffic of the port towns comprise chiefly of Indian produce, such as raw cotton, grain and pulse, and oilseeds; Calcutta also receives a considerable quantity of coal and coke, raw jute, gunny bags, hides and skins, and tea; Bombay port metallic ores; Karachi raw wool; and Madras ports hides and skins. In the inland trade Calcutta holds the premier position as a trading centre amongst the port towns, its trade being much larger than the total trade of all other port towns together, as will be seen from the figures in thousands of tons shown in the margin."

Rail and river borne Trade.	Average three years ending 1911-12	(IN THOUSANDS OF TONS)			Share in total trade per cent
		Twelve months.	Nine months.		
		1912-13	1912-13	1913-14	
Calcutta . .	11,257	12,746	9,557	9,270	19
Bombay . .	3,920	4,322	3,125	3,376	6
Karachi . .	2,341	3,219	2,650	2,064	5
Madras . .	2,129	2,469	1,769	1,878	4
TOTAL .	19,647	22,756	17,101	16,588	34

"With the expansion of mill industries,* the port towns of Calcutta and Bombay are now receiving large quantities of raw material, which is manufactured and distributed in India itself. The share of different ports in the total trade of each province are shown in the margin in percentages. About 64 per cent. of the trade of the province of Bengal is carried on with Calcutta. A large portion of the trade of the United Provinces, of Bihar and Orissa and of Assam is also with Calcutta. About 42 per cent. of the trade of the Punjab is with Karachi, and Sind and British Baluchistan does 75 per cent. of its trade with Karachi. The trade of the Bombay Presidency

Province.	Share of province in total trade.	PERCENTAGES			
		Calcutta.	Bombay	Madras	Karachi
Bengal . .	15	64	..		.
Madras . .	4	2	1	70	..
Bombay . .	5	..	41	.	..
United Provinces	8	20	10	..	12
Bihar and Orissa	15	42	1	1	..
Punjab . .	7	2	3	..	42
Central Provinces and Berar.	4	5	49	..	..
Assam . .	1	35	..	..	.
Sind and British Baluchistan	1	.	..	.	75
Rajputana and Central India	3	2	16	..	1
Nizam's Territory.	2	..	31	6	..
Mysore . .	1	..	4	21	..

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* It is asserted by some that the existence of low rates to the ports, in the past, encouraged expansion of mill industries at the ports, especially as the rates for the manufactured article from the raw product producing centres are high, *e.g.*, oil (vegetable).

excluding Sind with its port town (Bombay) is 41 per cent. The Central Provinces and Berar account for about 49 per cent. of its trade with Bombay, while the trade of Rajputana and Central India and the Nizam's Territory is to the extent of about 16 and 31 per cent. of their trade with Bombay. About 70 per cent. of the trade of the **Madras Presidency is** with its own ports. Mysore also does 21 per cent. of its trade with Madras ports."

" The articles of exports are generally indigenous, and the importance of the provincial trade depends on the production of the staple articles in the respective provinces. Bengal's position in the inland trade is high on account of jute, rice and other food grains, oilseeds, coal, and tea produced in the province. Bihar and Orissa is important for its enormous production of coal. Tea is the staple product of Assam. Cotton, wheat, and seeds of the Bombay Presidency and Sind; cotton and groundnuts in the Madras Presidency, and spring and winter crops (*e.g.*, rice, wheat, gram, linseed, rapeseed, etc.) in the United Provinces and the Punjab chiefly account for the large movement of these articles to Calcutta, Bombay port, Madras ports, and Karachi. The United Provinces, well served by railways, conduct a larger business in purely inland trade than any other province of India. In seasons of scarcity the traffic in food grains shows abnormal activity. Large increase under imports and decrease under exports, during the nine months of the year under review are due mainly to the movements of food grains."

—	(IN THOUSANDS OF TONS.)		
	Twelve months.	Nine months.	
	1912-13.	1912-13.	1913-14.
Exports from United Provinces .	3,310	2,565	1,697
Imports into United Provinces .	2,381	1,723	1,977

These remarks give an idea of the movement of trade of the country and the sphere of each port. In the table appended below the principal articles of the export and import trade of each province and the names of the provinces with which the trade is chiefly carried on are given. The Mill industries of Calcutta, Bombay and Madras get the benefit of low export rates for their raw produce carried to the ports, and this has, amongst other reasons, encouraged the establishment of milling industries at port towns or in the vicinity thereof. The details of figures of export and import and internal traffic in various articles, also those relating to local industries, and the rates of the different railways for them, will be discussed in the commodity chapters.

A Table is appended to this Chapter shewing the principal articles exported from and imported into each province.

Principal articles exported from and imported into each Province by rail, etc.

Principal articles exported from and imported into each Province by rail, etc.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months.		
	1912-13.	1912-13.	1913-14.	
Calcutta—				
Exports—				
Rice and paddy .	36	22	183	Bengal, United Provinces, Punjab, Central Provinces and Berar, Assam, Rajputana and Central India and Bihar and Orissa
Coal and coke .	127	81	134	Bengal and Assam
Kerosine .	266	200	211	Bengal.
Sugar . .	230	179	213	Bengal, United Provinces, Bihar and Orissa and Assam.
Iron, bars, sheets	182	128	144	Bengal, United Provinces, Punjab, Assam and Bihar and Orissa.
Salt . . .	406	300	316	Bengal, Bihar and Orissa, United Provinces and Assam.
Gunny bags . .	45	34	22	Bengal, Bihar and Orissa, United Provinces, Punjab and Central Provinces and Berar.
Imports—				
Linseed . .	160	151	191	Bihar and Orissa, United Provinces, Bengal, Central Provinces and Berar and Rajputana and Central India.
Mustard . .	135	99	130	Bihar and Orissa, United Provnces, Rajputana, Central India and Assam.
Food grains .	1,658	1,282	738	Bihar and Orissa, United Provinces, Assam, Bengal, Central Provinces and Berar and Rajputana and Central India.
Coal and coke .	5,819	4,339	4,202	Bihar and Orissa and Bengal.
Jute . . .	1,186	926	880	Bengal, Bihar and Orissa, . and Assam.
Hides and skin .	51	35	32	Bengal, Bihar and Orissa, United Provinces and Punjab.

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS). Twelve months. 1912-13.	Nine months. 1912-13.	Nine months. 1913-14.	Names of Provinces to which exported or from which imported.
Bengal—				
Exports—				
Coal and coke	3,814	2,959	2,644	Bihar and Orissa, United Provinces, Punjab, Bombay, Central Provinces and Berar, Rajputana and Central India and Calcutta.
Rice	522	315	174	Calcutta.
Iron, unwrought	58	43	38	Bihar and Orissa and Calcutta.
Gunny bags	271	206	164	United Provinces, Punjab and Calcutta.
Salt	15	11	14	Assam.
Sugar	17	12	14	Assam and Calcutta.
Imports—				
Coal and coke	1,330	905	1,183	Bihar and Orissa and Calcutta.
Gram and pulse	64	50	48	Bihar and Orissa, United Provinces and Calcutta.
Jute	174	75	74	Bihar and Orissa and Calcutta.
Metallic ores	80	50	47	Bihar and Orissa.
Railway materials	207	177	106	Bihar and Orissa and Calcutta.
Sugar	123	91	117	Ditto.
Oil seeds	61	45	52	United Provinces, Assam, Bihar and Orissa and Calcutta.
Tea	27	26	24	Assam.
Bihar and Orissa—				
Exports—				
Coal and coke	7,376	5,413	5,135	Bengal, United Provinces, Punjab, Central Provinces and Berar, Bombay, Rajputana and Central India and Calcutta.

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months.		
	1912-13.	1912-13.	1913-14.	
Bihar and Orissa—*contd.*				
Exports—*contd.*				
Grain and pulse .	330	277	136	Bengal and Calcutta.
Jute . . .	124	72	61	Ditto.
Metallic ores .	98	68	58	Ditto.
Railway materials	173	153	82	Ditto.
Sugar . .	61	36	24	Bengal, United Provinces and Central Provinces and Berar
Cotton, raw .	3	3	2	United Provinces and Calcutta
Lac . . .	16	12	11	Ditto.
Tobacco . .	33	25	30	Bengal, United Provinces and Calcutta.
Imports—				
Coal and coke .	92	57	99	Bengal.
Rice . . .	33	20	30	Ditto.
Iron, unwrought .	21	15	18	Bengal and Calcutta.
Grain and pulse .	127	74	84	United Provinces.
Oil seeds . .	12	11	5	Ditto.
Sugar . .	44	33	42	United Provinces and Calcutta
Cotton twist .	9	7	6	Central Provinces and Berar and Calcutta.
United Provinces—				
Exports—				
Grain and pulse—				
Rice . .	34	21	10	Bengal, Bihar and Orissa, Central Provinces and Berar Punjab and Rajputana and Central India.
Wheat . .	43	32	24	

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months.		
	1912-13.	1912-13.	1913-14.	
United Provinces—*contd.*				
Exports—*contd.*				
Grain and pulse—*contd.*				
Oil seeds . .	404	350	326	Bengal, Bihar and Orissa, Calcutta, Punjab and Bombay Port
Sugar . .	145	85	65	Bihar and Orissa and Punjab.
Cotton seed .	50	40	56	Punjab.
Timber . .	50	30	33	Ditto
Imports—				
Coal and coke .	1,256	897	825	Bengal and Bihar and Orissa.
Gunny bags .	32	23	12	Bengal and Calcutta.
Cotton, raw .	6	4	6	Bihar and Orissa and Rajputana and Central India.
Grain and pulse .	94	69	257	Bihar and Orissa and Punjab.
Lac . . .	7	5	5	Bihar and Orissa and Central Provinces.
Sugar . .	98	75	68	Bihar and Orissa and Calcutta.
Wheat flour .	11	8	11	Punjab.
Salt . . .	159	117	106	Punjab and Rajputana and Central India.
Chalk and lime .	19	14	16	Central Provinces and Berar and Rajputana and Central India.
Marble and stone	64	48	73	Punjab and Rajputana and Central India.
Tobacco . .	11	9	12	Bihar and Orissa.

Principal articles exported from and imported into each Province by rail, —contd.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months		
	1912-13.	1912-13.	1913-14.	
Punjab—				
Exports—				
Wheat flour .	25	19	20	Karachi, United Provinces and Bihar and Orissa
Salt . .	32	21	22	United Provinces and Bihar and Orissa.
Gram . .	153	137	91	Karachi, Bombay Port and Bombay.
Wheat . .	1,110	1,036	746	Karachi and Sind and British Baluchistan.
Rice . .	11	8	11	Rajputana and Central India and Karachi.
Cotton seed .	·3	·2	·1	Rajputana and Central India.
Sugar .	12	4	9	Ditto.
Timber . .	14	11	21	Karachi and United Provinces.
Imports—				
Rice . . .	24	15	6	United Provinces and Sind and British Baluchistan.
Wheat . .	21	12	8	United Provinces
Cotton, raw .	4	3	2	Ditto
Coal and coke .	1,324	1,021	768	Bengal, Bihar and Orissa and Karachi
Timber . .	108	60	61	United Provinces and Kashmir.
Marble and stone	102	74	108	United Provinces and Rajputana and Central India.
Bombay Port—				
Exports—				
Coal and coke . .	252	185	152	Bombay.
Cotton, raw .	13	11	3	Ditto

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months.		
	1912-13.	1912-13.	1913-14.	
Bombay Port—*contd.*				
Exports—*contd.*				
Rice . . .	30	20	51	Bombay.
Iron, bars, sheets	99	67	81	Bombay, Central Provinces and Berar, Rajputana and Central India and Nizam's Territory.
Railway materials	99	84	80	Bombay and Rajputana and Central India.
Sugar . .	99	73	95	Central Provinces and Berar, Bombay, and Rajputana and Central India
Imports—				
Food grains .	580	475	289	United Provinces, Punjab, Central Provinces and Berar and Bombay.
Cotton, raw .	230	96	221	Central Provinces and Berar, Bombay and United Provinces.
Oil seeds . .	193	313	520	United Provinces, Central Provinces and Berar, Bombay and Nizam's Territory.
Bombay Presidency—				
Exports—				
Salt . . .	146	97	103	Central Provinces and Berar, Nizam's Territory, and United Provinces.
Indian cotton goods.	28	21	19	United Provinces, Punjab, Calcutta, and Bombay Port.
Imports—				
Rice . .	74	52	70	Central Provinces and Berar Madras, and Bombay Port.
Wheat . .	85	76	35	United Provinces and Rajputana and Central India.

Principal articles exported from and imported into each Province by rail. etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS). Twelve months			Names of Provinces to which exported or from which imported.
	Twelve months	Nine months		
	1912-13	1912-13	1913-14	
Bombay Presidency—*contd.*				
Imports—*contd.*				
Sugar . .	91	56	66	United Provinces and Bombay port.
Coal and coke .	938	739	634	Bengal, Bihar and Orissa, and Nizam's Territory, and Bombay port.
Cotton, raw . .	29	16	10	Rajputana and Central India and Nizam's Territory
Cotton seed .	26	23	4	Central Provinces and Berar and Madras
Karachi –				
Exports—				
Marble and stone	14	3	41	Sind and British Baluchistan
Imports				
Food grains	2,039	1,870	1,208	Punjab, Sind and British Baluchistan and United Provinces.
Madras Presidency –				
Exports –				
Rice . .	125	88	132	Madras Ports and Nizam's Territory
Metallic ores .	51	36	30	Madras Ports.
Cotton seed .	25	23	5	Bombay and Madras Ports.
Sugar . .	38	24	20	Nizam's Territory and Madras Ports.
Timber . .	83	62	62	Madras Ports
Imports—				
Coal and coke .	279	206	274	Madras Ports and Nizam's Territory
Food grains .	232	174		
Til seed . .	19	14		

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS)			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months.		
	1912-13.	1912-13.	1913-14.	
Madras Ports—				
Exports—				
Coal and coke .	185	137	193	Madras
Railway materials	26	17	41	Ditto
Imports—				
Cotton, raw .	65	60	41	Ditto
Coal and coke .	73	56	73	Bihar and Orissa and Bengal.
Marble and stone.	170	133	113	Madras
Central Provinces and Berar—				
Exports—				
Marble and stone.	19	18	1	Rajputana and Central India and United Provinces
Timber . .	19	13	13	Bombay and Rajputana and Central India
Chalk and lime .	23	17	27	Bengal, Bihar and Orissa and United Provinces.
Imports—				
Coal and coke .	337	260	227	Bengal and Bihar and Orissa
Food grains .	65	41	44	United Provinces and Rajputana, and Central India.
Salt . . .	75	49	47	Bombay and Bombay port
Gram . .	25	17	11	United Provinces and Rajputana and Central India
Rajputana and Central India—				
Exports—				
Chalk and lime .	57	39	32	Bengal, Calcutta and United Provinces.
Marble and stone	95	68	66	United Provinces, Punjab, Bombay.

Principal articles exported from and imported into each Province by rail, etc.—contd.

—	QUANTITY (IN THOUSANDS OF TONS).			Names of Provinces to which exported or from which imported.
	Twelve months.	Nine months		
	1912-13	1912-13.	1913-14	
Rajputana and Central **India**—*contd.*				
Exports—*contd*				
Salt . . .	145	107	99	United Provinces and Punjab.
Cotton, raw .	50	25	23	Bombay Port and Bombay.
Cotton seed .	9	6	6	Bombay and Bombay Port.
Coal and coke .	75	56	92	Central Provinces and Berar and United Provinces.
Imports—				
Coal and coke .	625	515	234	Bengal and Bihar and Orissa.
Rice . . .	30	16	13	United Provinces, Punjab and Central Provinces and Berar.
Sugar . .	135	67	76	Bihar and Orissa, United Provinces, Punjab and Bombay Port.
Marble and stone	24	22	9	United Provinces and Central Provinces and Berar.
Timber	14	7	9	Central Provinces and Berar and Bombay.
Nizam's Territory—				
Exports—				
Coal and coke .	264	198	207	Bombay, Madras and Mysore.
Cotton, raw .	46	26	24	Bombay and Bombay Port
Food grains .	73	63	30	Bombay and Madras.
Cotton seed .	44	26	22	Bombay and Bombay Port.
Imports—				
Salt . . .	55	35	38	Bombay and Madras
Rice . . .	39	27	29	Central Provinces and Berar and Madras.
Sugar . .	21	14	13	Bombay Port, Bihar and Orissa and Madras.

Principal articles exported from and imported into each Province by rail, etc.—concld.

—	Quantity (in thousands of tons). Twelve months 1912-13	Nine months. 1912-13.	Nine months. 1913-14	Names of Provinces to which exported or from which imported
Sind and British Baluchistan—				
Exports—				
Rice . . .	85	57	63	Punjab, Karachi and Bombay.
Marble and stone	28	14	83	Punjab and Karachi.
Imports—				
Gram . .	10	7	5	Punjab and Karachi.
Wheat . .	53	46	18	Punjab.
Railway materials	15	3	23	Punjab and Karachi.
Assam—				
Exports—				
Rice and paddy .	191	106	123	Bengal and Calcutta.
Chalk and lime .	49	30	24	Ditto.
Oil seeds . .	7	5	12	Ditto
Tea . . .	85	79	75	Ditto.
Timber . .	42	29	40	Ditto.
Imports—				
Rice . .	12	10	30	Bengal, Bihar and Orissa and Calcutta.
Salt . . .	30	22	27	Bengal and Calcutta.
Sugar . .	18	13	15	Ditto.

CHAPTER VI.

GOVERNMENT CONTROL OF RAILWAYS IN THE MATTER OF RAILWAY RATES AND FARES.

Functions of the Board of Trade in London in connection with settlement of disputes between Railways and the public.

In England, the control over Railways is exercised by the Board of Trade. The maximum passenger fares and the maximum goods rates are fixed by the Parliament. The Board of Trade sanction the general classification of goods and hear complaints from the public in the matter of Railway rates and fares.

In England, under the Railway and the Canal Traffic Act, any person who is of opinion that the railway has charged him an unfair or unreasonable rate of charge, or has in any other respect treated him in an oppressive or an unreasonable manner, may complain to the Board of Trade. If the Board of Trade think there is reasonable ground for the complaint they may call upon the Railway Company for an explanation and endeavour to settle the differences amicably between the complainant and the Railway Company. For this purpose, the Board of Trade in London may appoint either one of their own officers or any other competent person to communicate with the complainant and the railway company and to receive and consider such explanations and communications as may be made in reference to the complainant. But in India the procedure of deputing an officer of the Government for purposes of an independent enquiry is rare. In the case of a complaint the Railway Board generally depend on such information as they can obtain from the Railway concerned, against whom the complaint is made, in replying to the reference of the complainant. The Board of Trade in London is required to submit, from time to time to the Parliament, reports of the complaints made to them and the results of the proceedings taken in relation to such complaints together with such observations thereon as the Board of Trade thinks fit.

Before the Railway and Canal Traffic Act of 1888 came into force the Act of 1873 was in operation. The Select Committee of 1882 on Railway rates and fares in their report, which was ordered to be printed by the House of Commons on 27th July 1882, made the following main recommendations :—

English and American commissions on Railway rates in 1882 and their views.

(1) That one uniform classification of goods be adopted over the whole railway system.

(2) That terminal charges be recognised but subject to publication by railways, and in case of challenge, to sanction by Railway Commission.

(3) That the Railway Commission be made permanent, and a Court of Record.

(4) That the Commission should be given full powers to revise traffic agreements between railways in as large a measure as exercised by the Board of Trade.

At the same time as the above report was published in England an Advisory Commission, on differential rates by rail roads between the West and the Sea Board in the United States, made the following observations in the matter of publicity in July 1882:—

"Railroad problems assume such different phases from year to year, and almost from day to day, that those who have authority in railroad matters may justly be expected and required to give their earnest attention and best efforts to making their franchises accomplish the great ends of equal, fair, prompt, and beneficial accommodation which was intended in their grant. And those ends they should have in view in determining upon the continued existence of differential rates. Their observation of the general course of traffic from day to day and from month to month ought to enable them to determine whether the differentials are too large or too small; whether they are influencing trade unfairly and unnaturally; and whether they operate as an improper restraint upon competition; and when the improper effect is discovered, they ought to correct the wrong without hesitation or delay. To enable them to judge fairly and with full understanding accurate statistics of their business should be kept by each of them, and submitted to the others or kept in some common office; and these statistics ought to be periodically given to the public also. Publicity is a great corrector of imaginary evils, and may be an important preventive of evils, both imaginary and real."

"We do not assume or believe that there exists in railroad official circles any legitimate authority to determine the question of rates arbitrarily. Large powers of self-Government have, undoubtedly, been left by the law in railroad managers, but all their authority is qualified by duty to the public; and it cannot be too often or too pointedly asserted that the obligation on their part to serve the public with relative fairness is of perpetual force. In their future dealings with the important question which has been the occasion for our coming together, the great Trunk Lines should be particularly careful to give no occasion for just complaint, that they subject any one of the seaboard cities to the operation of arbitrary or unfair regulations or charges, or that they fail to observe towards any one of them, or towards the people trading or desiring to trade with them, the mandate of the common law—to deal justly and distribute fairly the benefits and burdens which are incident to their occupation."

In referring to the Government control of railway rates in the United States one can do no better than quote the following from the book on

"Railway Rates and Traffic" translated from 1907 Edition of C. Colson's "Transport E. T. Tariffs," by Charles Travis :—

American Railway Federal congress on organization of control of railway rates.

"In 1887 the Federal Congress created an organisation of control called the Interstate Commerce Commission, the authority of which has been extended and more clearly defined by the Acts of 1889, 1893, 1903 and 1906. This Commission consists of seven members, of whom four at the most may belong to the same political party. Its principal function is to ensure the due publication and observation of tariffs; it also controls the application of certain measures of scrutiny arranges the forms which have to be used for the accounts and statements of the companies and prepares statistics from these statements. The Commission published annual reports on the matters coming within its jurisdiction. Its scope includes not only railway companies, but also Express companies—which organise a great portion of the direct services in the States Sleeping companies pipe lines, and the accessory services of warehousing, etc."

"The various laws that have been passed with respect to interstate traffic render obligatory the publication of tariffs, and require that all modifications be published and notified to the commission at least 30 days before they are put in force, with the exception of those specially authorised. In addition, the application of rates higher than those published in the tariffs, any rebates, and any special agreements are absolutely forbidden."

"Until 1906 the Interstate Commerce Commission could only declare rates unreasonable, either of themselves or in comparison with others, but to-day it can fix maximum tariffs which should be substituted for the tariff in question, and its decision remains binding for two years if same be not modified by a judicial decision. To obtain such a judgment the railway company must take the initiative and prove that the decision of the Commission was wrongly founded. The Interstate Commerce Commission never interferes except in the case of a complaint regarding a specified rate; it cannot force the companies to substitute a mathematical tarification for the commercial one; its real purpose is to eradicate the differences in tariffs that exist between localities where such cannot be justified and, above all, to prevent secret rebates which may be the result of special agreements."

Long and short haul rates.

"It may be interesting to indicate how, notwithstanding the severe character of the legislation, the principles of the commercial tarification are respected. Amongst the enactments is one that almost coincides with the French "intermediate station" clause, by which a railway company is forbidden to charge more for a short journey than for a long one if the first is included in the second and the transport is effected under similar circumstances and conditions; but the Interstate Commerce Commission can permit a breach of this rule in justified cases."

Section 4 of the United States Act to regulate commerce (1887) reads as follows :—

> "That it shall be unlawful for any common carrier, subject to the provisions of this Act, to charge or receive any greater compensation in the aggregate for the transportation of passengers or the like kind of property under substantially similar circumstances and conditions, for a shorter than for a longer distance over the same line, in the same direction, the shorter being included with the longer distance, but this shall not be construed as authorising any common carrier within the terms of this Act, as great compensation as for a longer distance. Provided however that upon application to the Commissioner appointed under the provisions of this Act, such common carrier may in special cases, after investigation by the Commissioner be authorised to charge less for longer than for shorter distances for the transportation of passengers or property, and the commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section of this Act."

The English Act was revised since the publication of the report of the special Committee of 1882, referred to in the beginning of this chapter. The Railway Act now in force in England is the Railway and Canal Traffic Act of 1888.

Appointment of a permanent Railway commission in England and its function and jurisdiction.

The section of the English Act of 1888 relating to appointment of a permanent commission, recommended by the Committee of 1882 referred to in the early portion of this chapter, is reproduced below for information :—

"On the expiration of the provisions of the Regulation of Railways Act, 1873, with respect to the Commissioners therein mentioned, there shall be established a new commission, styled the Railway and Canal Commission (in this Act referred to as the Commissioners), and consisting of two appointed and three *ex-officio* Commissioners and such Commission shall be a court of record, and have an official seal, which shall be judicially noticed. The Commissioners may act notwithstanding any vacancy in their body."

"(1) The two appointed Commissioners may be appointed by Her Majesty at any time after the passing of this Act, and from time to time as vacancies occur."

"(2) They shall be appointed on the recommendation of the President of the Board of Trade, and one of them shall be of experience in railway business."

"(3) Section five of the Regulation of Railways Act, 1873, shall apply to each appointed Commissioner."

"(4) There shall be paid to each appointed Commissioner such salary not exceeding three thousand pounds a year as the President of the Board of Trade, may, with the concurrence of the Treasury, determine."

"(5) It shall be lawful for the Lord Chancellor, if he think fit, to remove for inability or misbehaviour any appointed Commissioner"

"Of the three *ex-officio* Commissioners of the Railway and Canal Commission one shall be nominated for England, one for Scotland, and one for Ireland, and an *ex-officio* Commissioner shall not be required to attend out of the part of the United Kingdom for which he is nominated The *ex-officio* Commissioner in each case shall be such judge of a superior court as—

(*a*) in England the Lord Chancellor ; and

(*b*) in Scotland the Lord President of the court of session ; and

(*c*) in Ireland the Lord Chancellor of Ireland ; may from time to time by writing under his hand assign and such assignment shall be made for a period of no less than five years"

"For the purpose of the attendance of the *ex-officio* Commissioners, regulations shall be made from time to time by the Lord Chancellor, the Lord President of the Court of Session, and the Lord Chancellor of Ireland respectively, in communication with the *ex-officio* Commissioners for England, Scotland, or Ireland, as the case may be, as to the arrangements for securing their attendance, as to the times and place of sitting in each case, and otherwise for the convenient and speedy hearing thereof."

"Subject to the provisions of this Act, and to general rules under this Act, the Commissioners may hold sittings in any part of the United Kingdom, in such place or places as may be most convenient for the determination of proceeding before them"

The jurisdiction of the Permanent Railway Commission has been very well explained in Browne and Theobold's Law of Railway Companies in connection with Section 8 of Railway Canal Traffic Act of 1888. This Section together with the notes, as given in Browne and Theobold's publication, is reproduced below for information :—

"RAILWAY AND CANAL TRAFFIC ACT, (1888 SECTION 8).

Jurisdiction.

Jurisdiction of Railway Commissioners

There shall be transferred to and vested in the commissioners all the jurisdiction and powers which at the commencement of this Act were vested in, or capable of being exercised by the Railway Commissioners, whether under the Regulation of Railways Act, 1873, or any other

transferred to the commission.

Act, or otherwise, and any reference to the Railway Commissioners in the Regulation of Railways Act, 1873, or in any other Act, or in any document, shall be construed to refer to the Railway and Canal Commission established by this Act.

Extent of jurisdiction of Commission.

The Commission regard as binding upon it the decisions of the court from the commencement, notwithstanding the change in its constitution. See Didoot, Newbury, and Southampton Railway Company *vs.* G. W. Railway Co. and L. and S. W. Railway Co., 1896, 9 Ry. and C. Traff. Cas. 210, at p. 229; Pickfords *vs.* L. and N. W. Ry. Co., 1905, 12 *ib.* 154.

The Railway and Canal Commission has jurisdiction in respect of the following matters :—

Facilities.

Reasonable facilities by railway and canal companies for the receiving, forwarding, and delivery of traffic upon and from their several railways and canals—Railway and Canal Traffic Act, 1854, s. 2, *ante*, p. 422.

Due and reasonable facilities by railway and canal companies for receiving and forwarding through traffic—Railway and Canal Traffic Act, 1854, s. 2, *ante*, p. 436.

Reasonable facilities by railway companies for the junction of private sidings or private branch railways with the companies' lines and for receiving, forwarding, and delivering traffic upon and from these sidings or private railways—Railways (Private Sidings) Act, 1904, s. 2, post, p. 1121. Rescission or variation of any Order made thereunder, *ib.* s. 3, post, p. 1123.

Undue preference or prejudice of any trader by railway and canal companies.—Railway and Canal Traffic Act, 1854, s. 2, *ante*, p. 426; Railway and Canal Traffic Act, 1888, s. 27, post, p. 816, s. 29 (which caused by group rates), post, p. 846.

Obligation of special Acts.

Enforcement of provisions contained in special Acts with regard to traffic facilities and undue preference, or works for the accommodation of the public, or which impose obligations on a company in favour of the public or any individual—Railway and Canal Traffic Act, 1888, s. 9, post, p. 826.

Working agreements.

The approval and revision of working agreements between railway companies—Regulation of Railways Act, 1873, s. 10, *ante*, p. 716.

The approval of any agreement between a railway and a canal commany concerning the conduct of the traffic of the latter company or the rates or tolls levied by it—Regulation of Railways Act, 1873, s. 16, *ante*, p. 721.

The maintenance of canals owned or managed by railway companies—Regulation of Railways Act, 1873, s. 17, *ante*, p. 721.

Rate

Disintegration and analysis of rates charged by Railway and Canal Commission—Regulation of Railways Act, 1873, s. 14, *ante*, p. 717

Railway and Canal Traffic Act, 1888, ss. 33, 34, post. pp. 850, 852; Railway and Canal Traffic Act, 1894, s. 3, post, p. 1014.

Questions involving legality of any toll rate or charge—Railway and Canal Traffic Act, 1888, s. 10, post, p. 827.

Rebates on siding rates—Railway and Canal Traffic Act, 1894, s. 4, post, p. 1014.

Regulation of tolls, etc., charged on canal controlled by railway company—Railway and Canal Traffic Act, 1888, s. 38, post, p. 854.

After complaint by applicant to the Board of Trade under s. 31 of the Railway and Canal Traffic Act, 1888 :—

(*a*) Through rates—Railway and Canal Traffic Act, 1888, s. 25, post, p. 837.

(*b*) Increase of rates—Railway and Canal Traffic Act, 1894, s. 1, post, p. 1009.

Powers of Commission under miscellaneous Acts.

The provision by railway companies of third class accommodation and workmen's trains—Cheap Trains Act, 1883, s. 3, *ante*, p. 814.

Enforcement of Board of Trade orders under the Regulation of Railways Act, 1889, s. 2, post.

Approval agreements for the transfer of railway undertakings under the Transfer of Railways (Ireland) Act, 1890, post, p. 925.

The provision and observance by railway companies of schedules of the hours of labour of their servants—Railway Regulation Act, 1893, s. 1, post.

Objections to draft rules made by the Board of Trade under the Railway Employment (Prevention of Accidents) Act, 1900—s. 3 of that Act, post, p. 1098.

With regard to steam vessels worked, etc., by railway companies, the jurisdiction of the Commission extends to :—

(*a*) Equality of treatment—Regulation of Railways Act, 1868, s. 16, *ante*, p. 652 ; Regulation of Railways Act, 1873, s. 6, *ante*, p. 713.

(*b*) Undue preference—Railway and Canal Traffic Act, 1888, s. 28, post, p. 846.

(*c*) Facilities for through traffic and through rates—Railway and Canal Traffic Act, 1888, s. 25, post, p. 837.

(*d*) Disintegration and analysis of rates—Railway and Canal Traffic Act, 1888, s. 28, post, p. 846.

(*e*) Exercise by railway companies of their powers in relation to steam vessels under Part IV of the Railways Clauses Act, 1863—Regulation of Railways Act, 1873, s. 10 (2), *ante*, p. 716.

Further the Railway and Canal Commission has jurisdiction in the following proceedings of the nature of arbitration :—

Proceedings of nature of arbitration.

Differences between a railway company and the Postmaster-General under the Telegraph Acts—Telegraph Act, 1878, ss. 3, 5, 6, *ante*, p. 786.

Differences between a railway company and the Postmaster-General as to remuneration for the conveyance of mails or under the Post office (Parcels) Act, 1882, referred at the instance of either party—Conveyance of Mails Act, 1893, s. 1, post, p. 1002.

By appointment of the Board of Trade, any difference to which a railway company or canal company is a party, which is required or authorised under the provisions of any general or special Act, to be referred to the arbitration of the Board of Trade—Board of Trade Arbitrations, etc., Act, 1874, s. 6, *ante*, p. 730. In connection with this, differences under ss. 2, 5, 6, 7, and 8 of the Schedule to the Rates and Charges Orders, post, pp. 943, 947, 950, 951, may be referred to the Commission.

With the consent of the Commission, at the instance of either party, differences between railway companies required or authorised under the provisions of any general or special Act to be referred to arbitration—Regulation of Railways Act, 1873, s. 8, *ante*, p. 711; Railway and Canal Traffic Act, 1888, s. 15, post, p. 830.

With the consent of the Commission, on the application of the parties any difference to which a railway company or canal company is a party—Regulation of Railways Act, 1873, s. 9, *ante*, p. 716.

In India it is believed that a case of undue preference against a railway can only be decided by a Railway Commissioner to be created to decide each case, as there is no permanent Railway Commissioner in India. It is perhaps not known that the Government of India, rather the Secretary of State, have absolute powers in the matter of "undue preference" in respect of certain railways.

Powers of the Government in the matter of rates and facilities constituting undue preference or found unreasonable and the difference between the control that can be exercised over various railways.

First, in regard to State lines, *viz.*, the Eastern Bengal, the North Western, and the Oudh and Rohilkhand Railways, the Government of India being the supreme authority, can, in the same way as the Board of Directors in London can in respect of company worked State lines, order the Agent of a state worked state line to cancel such rates, as the Railway Board consider to constitute "undue preference" or are unreasonable.

Secondly, it is observed that in respect of the Rohilkund and Kumaon, the Assam-Bengal and the South Indian Railways, the Secretary of State has the absolute power to decide whether a rate constitutes "undue preference" or not, whether against a railway or as between members of the public, as will be seen from the following clause, which appears in the contracts between the Secretary of State and these railway companies.

"No undue or unreasonable preference or advantage to or in favour of any particular person, company, or railway administration, or any particular description of traffic in any respect whatsoever, shall be made or given by the company, nor shall any particular person, company, or railway administration be subjected by the Company to any undue or unreasonable prejudice or disadvantage in any respect whatsoever. The Secretary of State shall have absolute power for the purposes of this section to decide whether any preference, advantage, prejudice, or disadvantage is undue or unreasonable."

Thirdly, in respect of the Bengal Nagpur and the Bengal and North-Western Railways the Secretary of State has powers to decide whether a rate constitutes undue preference as between members of the public only. The following clause appears in contracts with these two lines.

"The Company shall not as between members of the public make or give undue or unreasonable preference or advantage to or in favour of any particular person or company or any particular description of traffic or subject any particular person or company to any undue or unreasonable prejudice or disadvantage. The Secretary of State shall have absolute power for the purposes of this section to decide whether any preference, advantage, prejudice or disadvantage is undue or unreasonable."

Such clauses as referred to above are, however, absent from the contracts between the Secretary of State and the East Indian, the Bombay, Baroda and Central India, the Great Indian Peninsula, and the Madras Railways for reasons which are not very clear, especially when clauses similar to those appearing in the contracts with the Assam Bengal, the Rohilkund and Kumaon and the South Indian Railways appear in the contracts with the Native State lines.

But in the contracts with all the important trunk lines, including the East Indian, the Great Indian Peninsula, the Madras and Southern Mahratta, the South Indian, the Bombay, Baroda and Central India, the Bengal Nagpur Railways, the undermentioned clause appears :—

"The Secretary of State shall from time to time authorise maximum and minimum rates within which the company shall be entitled to charge the public for services rendered by way of or in connection with the conveyance of passengers and goods on the undertaking, and shall prescribe the several classes and descriptions of passengers and goods to which such rates shall be respectively applicable, as well as the extent to which, within the maxima and minima so authorised, the Company may vary the said rates in respect of the distance or weight or special conditions under which such conveyance takes place or services are rendered."

It will be seen that while the railways are allowed to regulate their rates within the maxima and minima limits fixed by the Secretary of State from time to time, the Secretary of State has also powers to prescribe the extent to which, within the maxima and minima limits, the company may vary the said rates in respect of distance or weight or special conditions under which conveyance takes place.

Provision of this latter clause appears to have been made to meet cases, where for instance, the Government may want any traffic such as grain to be carried when offered in wagon loads for long distances at a cheaper rate than the maximum but not lower than the minimum.

That this was obviously the intention is evident from the fact that in the East Indian Railway contract of 1879 it was provided that for grain traffic, the Government could order the railway company to reduce the rate to a figure not lower than ⅛th pie per maund per mile when the traffic was tendered in wagon loads and for leads of over 300 miles.

Similarly in the case of passenger traffic, it was laid down in the 1879 East Indian Railway contract that the Government could order reduction in the lowest class fares to 2 pies per unit per mile.

If the intention was not as indicated above it is difficult to understand what was at all the necessity for such a provision. Apparently instead of confining the Government power of regulating the rates, within the maximum and minimum for grain traffic and third class passenger fares only, the power was extended to traffic of all descriptions, when fulfilling certain conditions as to wagon loads, long lead, etc.

The following are the dates of the contracts with the various railways—

Great Indian Peninsula Railway	1900
Bombay, Baroda and Central India Railway	1907
Madras and Southern Mahratta Railway	1908
East Indian Railway	1879 and 1899
Assam-Bengal Railway	1892
Rohilkund and Kumaon Railway	1901
South Indian Railway	1890 and 1910
Bengal and North-Western Railway	1882
Bengal Nagpur Railway	1891 and 1902

Promise of the Government to the Indian public to secure for them the same rights in the matters of railway rates facilities, etc., as enjoyed by the public in England.

That it was the intention of the Government of India to secure the same rights to the Indian public in the matter of railway rates and fares as enjoyed by the public in England is evident from the following remarks in Government of India Resolution of 12th December 1887, which was published for the information of the public :—

"The rights were secured to the public in England by the Railway and Canal Traffic Acts of 1854 and 1873. Care will be taken to secure the same rights to the public in India in the new Railways Act now under consideration, etc., etc."

Necessity for a tribunal to test the intentions and actions of Railway Traffic managers in the interests of the public.

The English Act of 1873 is practically still in force in conjunction with the Act of 1888. One of the important privileges now enjoyed by the public in England, under the 1873 Act and the 1888 Act, is the control of the railways by appointment of railway Commissions or tribunals; and so lately as in December 1916 Mr. W. M. Acworth, one of the greatest authorities in England on the question of railway rates and fares observed "that railway rates and fares should be fixed by expert General Manager subject always to be brought before a competent tribunal and required to satisfy that in fixing any rate he has given to the study of the question the best brains he has possessed and that he has been justified by no motive which cannot be publicly avowed and justified."

The late Mr. T. Robertson, C.V.O., urged the necessity for a permanent commission and recommended that the members of the Railway Board be employed in association with a law member, when a question of law arises, for purposes of Chapter V of the Indian Railways Act, the Act being revised on the lines of the English Railway and Canal Traffic Act so as to permit of the Railway Commission being always in session.

Whether or not the time for the establishment of a permanent Railway Commission in India has yet arrived, or whether the Government of India, through their Railway Department, should exercise the control which the contracts of the several railways provide, and whether the provisions in the contracts of all the lines should be made uniform in regard to Government powers in the matter of rates constituting undue preference, are questions for discussion.

It may not also be out of place to mention here that, if required in the interests of public convenience, the Secretary of State may, from time to time, require a railway company to enter into agreements with other Railways upon reasonable terms as to payment and under reasonable conditions and restrictions, for the settlement of through rates and charges for interchanged traffic.

The difference between the English' and the Indian conditions is that while in England the Government has no self-interest at all in connection with Railways, in India, in some cases, the Government is the sole proprietor and in many others the principal proprietor.

The Members of the Railway Commission in England, whose office is a permanent one and disentangled from private business, would treat matters of complaints in regard to undue preference or withdrawal of facilities from a purely judicial point of view. But in India, in cases of disputes between Railways in connection with through rates, the Government, having financial interest in the Railways and being the trustee of public funds, have got to consider the welfare of India as a whole. While in England the Railway Commissioners who are appointed by the Government, are to adjudicate between the interests of the public on the one part, and of private concerns owning the Railways on the other, the position in India is not exactly the same. The Government in the matter of control of Railway rates will have to be careful that the interests of the tax-payers, as a whole, are not affected by a decision which while being very appropriate in the particular case would involve unnecessary reductions in various other directions mainly on judicial grounds and might affect the Government revenue from railways.

At present the appointment of a Commission is left entirely to the discretion of the Governor-General in Council in India to decide upon the occasions when the Railway Commission is to be appointed. Therefore if the Government does not agree to the creation of a commission on a complaint being made either by the public or by one railway against another railway administration there is no remedy in a court of law.

Government of India not granted powers to regulate terminals or to appoint independent Committees to examine Railway goods classification as done by the Board of Trade in London.

In England, the classification of each article and the maximum rate for each classification have to be approved by the Board of Trade. In India, this is also done, and the Railway Board must sanction any change in the classification before it can have effect. But the railway terminal charges are not submitted to the Railway Board for specific sanction. The Indian Law provides that a railway may levy reasonable terminals, but in England the law in regard to terminals is as follows :—

"Every railway company shall submit to the Board of Trade a revised classification of merchandise traffic, and a revised schedule of maximum rates and charges applicable thereto, proposed to be charged by such railway company, and shall fully state in such classification and schedule the nature and amounts of all terminal charges proposed to be authorised in respect of each class of traffic, and the circumstances under which terminal charges are to be made. In the determination of the terminal charges of any railway company, regard shall be had only to the expenditure reasonably necessary to provide the accommodation in respect of which such charges are made irrespective of the outlay that may have been actually incurred in providing that accommodation."

In India, a somewhat similar clause in regard to terminals is required because some of the Indian Railways use high terminals simply in order to block a competitive route whereas they *do not* charge similar terminals elsewhere for same description of traffic for similar distances from or to a same station when not destined to or booked from a rival railway or port.

In England the public are given an opportunity of lodging a complaint against a classification, and the Board of Trade after hearing all the parties submit a report to the Parliament with their observations. There is no such provision in the Indian Act.

The Board of Trade in England are allowed under section 24 (9) of the 1888 Act to employ and consult (apparently independently of the Railways) such skilled persons, as they deem necessary or desirable, in preparing, revising, and settling the classification and schedules of rates; but in India, generally the fixing of classification is a matter between the railways and the Government, and in one case the Railways made enhancements in General classification, which the Government of India sanctioned in the first instance, but withdrew when the question was taken up by some Indian merchants. But ordinarily the public cannot even know that a classification is to be revised before the Government sanctions a rise in the classification.

Further, formerly the Government of India in their Administration Report for Railways used to publish—

(1) all contracts with railway companies,

(2) more detailed traffic statistics showing the fluctuations of traffic under various heads over each railway,

(3) all important rates alterations,

(4) gists of traffic agreements between railways regarding rating, routing and division of traffic,

(5) working agreements between railways regarding interchange of traffic.

Publicity

But these are not now published in the Railway Board Administration Reports for the information of the public.

Copies of Indian Railway Conference Regulations used also to be available to the public for sale, but this is not done now although expenses in connection with Railway Conferences are borne by the Indian Railways, most of which are practically the property of the Government.*

Then, while the Indian Railways submit to the Home Board all joint station working agreements, relating to interchange of traffic and working of joint stations, for approval, they simply send the traffic agreements, relating to rating, routing and division of traffic for the information of the Railway Board; and, in some cases, the railways do not even do this.

Under the 1894 English Act, when a Railway Company increases its rate and if any complaint is made that the rate or charge is unreasonable, it lies on the Company to prove that the increase of the rate or charge is reasonable, and for that purpose it is not sufficient for the Railway Company to show that the rate or charge is within any limit fixed by an Act of Parliament or by any provisional order confirmed by Act of Parliament. This Act also provides that the Railway and Canal Commissioners shall have jurisdiction to hear and determine any complaint with respect to any such increase of rate or charge but not until a complaint with respect thereto has been made to and considered by the Board of Trade under section 31 of the Railway and Canal Traffic Act of 1888. In India, so far as things stand at present, a Railway Company can increase its rate within the maxima and can levy any terminal it likes until a Railway commission decides that the terminal in question is unreasonable.

There is nothing in the present Indian Railway Act distinctly authorising the Government of India to sanction schedule of maxima and minima rates, to be charged over various railways in India, or the classification of goods, although in the contract with each railway company it is provided that the Government shall fix the classification of goods and the maxima and minima rates for each class; but these contracts do not cover rates of state worked state lines. Section 24 (5) of the Railway and Canal Traffic Act, 1888, of England distinctly provides that when any classification or schedule of rates has been provisionally sanctioned by the Board of Trade and embodied in a provisional order, of the Board of Trade, they should procure a Bill to be introduced in the either Houses of Parliament for an Act to comfirm the Provisional Order, which should be set out at length in introducing the Bill. But there does not appear to be anything similar to this in the Indian Railway Act.

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* So long as the Indian Railway Conference was run by the Government the Rules and Regulations were available to the public, but since it is run independently by the railways the regulations are not sold to the public.

CHAPTER VII.

MAXIMA AND MINIMA RATES AND COST OF TRANSPORTATION.

The maximum and minimum rates on Indian Railways, excepting on the hill lines and a few narrow gauge lines of short lengths involving high working expenses, are as follows :—

Maximum and minimum rates and fares generally in force on Indian Railways.

Passenger fares.

Class.	Maximum pies per passenger per mile.	Minimum pies per passenger per mile.
First	18	12
Second	9	6
Intermediate	4½	3
Third	3	1½

Goods rates on all traffic other than coal in full wagon loads.

Class.	PIES PER MAUND PER MILE.	
	Maximum.	Minimum.
X (Explosives including Dangerous goods) . .	1½	⅙
5th	1	⅙
4th	⅚	⅙
3rd	⅔	⅙
2nd	½	⅙
1st	⅓	⅒

COAL TRAFFIC RATES FOR WAGON LOADS.

Maximum rates.

	Per maund per mile.
	pies.
For all distances up to 400 miles inclusive	0·15
For distances above 400 miles—	
For the 1st 400 miles	0·15
For the distance in excess of 400 miles	0·10

Minimum rates.

	Per maund per mile.
	pies.
For distances up to 300 miles	0·10
Plus for any distance in excess of 300 miles and up to 500 miles inclusive	0·066
Plus for any distance in excess of 500 miles	0·05

Condition 1.—That the rate shall be calculated on the through distance between the station of origin and the station of destination of the consignment.

Condition 2.—That when there are two or more routes to destination from the colliery where the traffic originates, the Railway or Railways forming the longer route may calculate charges on the same mileage as the Railway or Railways forming the shorter route.

Condition 3.—That coal for the use of foreign railways is charged at the same rates and under the same conditions as coal carried for the public.

Condition 4.—That the rates charged are divided between the Railways over which the traffic is carried in proportion to the mileage of each, provided that if the distance the coal is carried over any railway is less than 25 miles, the mileage of that Railway in dividing the freight shall be reckoned as 25 miles.

The history of the maxima and minima rates for both passenger and goods traffic has already been given in Chapters I and II and the present minimum rates for coal have also been referred to and discussed in detail in Chapter II and in the chapter on Coal (Chapter XII).

Originally, only maximum rates for each railway were fixed separately, and subsequently they were made uniform for all the lines.

Some years after the maximum rates had been in operation, it was considered necessary to fix the minimum rates as well, so as to limit the power of the railways in quoting very low rates in competition with one another.

It was thought that the shareholders being protected by a guaranteed minimum rate of interest at 5 per cent. per annum on their investment would not be very much affected if the railway earnings went down and the net receipts fell below the guaranteed interest, owing to unnecessary cutting down of rates in competition between two or more railways.

Reasons for fixing the minimum rates.

It was considered that it would be possible for one railway, if there were no restrictions in the matter of quotation of low rates, to bring down the rates of other lines in addition to lowering its own rates. In a case, where, for instance, a railway possesses a longer route and finds that it can only expect to get a share of the traffic by forcing down the rates of a rival line, it is necessary to put a restriction on the power of a railway to force or continue wasteful competition, because when the longer route does not carry the traffic, it cannot lose anything by quoting abnormally low rates for the purpose of bringing the rival route to an arrangement to share the traffic in order to avoid unnecessary loss of revenue. Sometimes it is found that it pays better to share the traffic under contention than to continue competition and force down rates which not only affect competitive points but have the tendency to lower rates at non-competitive points also.

It has previously been stated that for commodities in which the traffic of the railways was considerable, *viz.*, agricultural productions, minerals, and articles in first stage of manufacture, the minimum was fixed at $\frac{1}{10}$th pie per maund per mile (or 2·7 pie per ton per mile), as the average cost of haulage on state lines at the time (1887) was about $\frac{1}{10}$th pie per maund per mile.

But from time to time there have been applications to reduce the minimum to $\frac{1}{15}$th pie per maund per mile in the case of grain and seeds traffic to the port of Calcutta on the ground that the cost of haulage on the East Indian Railway is lower than $\frac{1}{15}$th pie per maund per mile.

The minimum rates for coal carried for long distances in full wagon loads have of course been reduced to a lower figure than $\frac{1}{10}$th pie and the reduced minimum applies to all the railways; but the case of coal is exceptional.

Lower minimum rates for coal for Bengal Railways discussed.

In the first place, in the case of coal traffic, the railways most affected are the coal carrying lines of Bengal, *viz.*, the East Indian Railway and the Bengal Nagpur Railway on whose lines the traffic originates, and their cost of haulage, owing to cheap fuel and other reasons, is low. It is about $\frac{1}{20}$th pie per maund per mile on the East Indian Railway and about $\frac{1}{15}$th pie per maund per mile on the Bengal Nagpur Railway. Secondly, the coal traffic is carried in wagon loads and in train loads and the cost of transhipment, loading and unloading, is borne by the owners, so that a traffic like this can be carried at low rates. Thirdly, the Indian railways generally have benefited by the reduction in coal rates owing to the cost of their fuel being cheapened by reduction in the cost of carriage of coal.

Of the total raisings of coal in India more than ¼th (very nearly ⅓) is consumed by railways.

Further, it may also be pointed out that under ordinary conditions, the Bengal Nagpur and the East Indian Railways only would be required to supply funds for wagons required for coal traffic, although the other lines have in times of pressure, given wagons on loan to the East Indian Railway and Bengal Nagpur Railway, on payment of hire. But the other railways are not ordinarily required to invest capital in providing wagons for coal traffic, which originates largely on the East Indian Railway or the Bengal Nagpur Railway, and under the recognised practice of railways, the railway on which the traffic originates is required to supply wagons for the traffic, and the heavy *expense of providing sidings to collieries and the work of distribution of empties and of collecting loaded wagons from a very large number of small collieries all falls on the East Indian and Bengal Nagpur Railways.*

The other lines practically get loaded wagons from the East Indian and Bengal Nagpur Railways, some times in train loads, to haul over their lines.

Therefore, there have been special reasons, peculiar to this traffic, which favoured a reduction in the minimum rate for coal on all railways in India.

To revert now to the question of minimum rates for agricultural productions and minerals (other than coal).

The following tables compiled from the Government of India Administration Report on Railways, give for the important lines for the years noted below—

Cost of operation and operative statistics.

(1) The average rate charged per unit.
(2) The average cost of haulage per unit.
(3) The average profit per unit.

(NOTE.—The average for the year has been arrived by taking the figures for 2 half years and dividing them by two, and further the average cost of haulage represents the working expenses, excluding interest on capital.)

Railways.		1901.	1904.	1907.	1910.	1913.	1915.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
East Indian	Average sum received for hauling one ton one mile.	4·39	4·04	3·76	3·31	3·18	2·85
	Average cost of hauling one ton one mile.	1·65	1·41	1·55	1·37	1·32	1·21
	Average profit in hauling one ton one mile.	2·74	2·63	2·21	1·94	1·86	1·64
Bengal Nagpur	Average sum received for hauling one ton one mile.	5·45	5·11	4·53	3·63	3·70	3·27
	Average cost of hauling one ton one mile.	3·38	2·76	2·26	1·91	1·81	1·59
	Average profit in hauling one ton one mile.	2·07	2·35	2·27	1·72	1·89	1·68
Great Indian Peninsula.	Average sum received for hauling one ton one mile.	6·89	6·32	5·84	5·12	4·75	4·48
	Average cost of hauling one ton one mile.	3·15	2·97	2·93	2·69	2·71	2·54
	Average profit in hauling one ton one mile.	3·74	3·35	2·91	2·43	2·04	1·97
Bombay, Baroda and Central India.	Average sum received for hauling one ton one mile.	7·28	7·59	5·89	6·83	6·13	5·76
	Average cost of hauling one ton one mile.	3·06	3·15	2·50	2·96	2·70	2·52
	Average profit in hauling one ton one mile.	4·22	4·44	3·39	3·87	3·43	3·24

Railways.		1901.	1904.	1907.	1910.	1913.	1915.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
North Western.	Average sum received for hauling one ton one mile.	5·07	4·64	4·42	4·80	4·35	4·20
	Average cost of hauling one ton one mile.	2·67	2·23	2·25	3·06	2·48	2·53
	Average profit in hauling one ton one mile.	2·40	2·41	2·17	1·74	1·87	1·67
Oudh and Rohilkhand.	Average sum received for hauling one ton one mile.	5·31	4·71	5·04	4·85	4·80	4·92
	Average cost of hauling one ton one mile.	2·56	2·53	3·35	2·61	2·65	2·60
	Average profit in hauling one ton one mile.	2·75	2·18	1·69	2·24	2·15	2·32
Bengal and North-Western.	Average sum received for hauling one ton one mile.	5·43	5·53	5·48	5·29	5·46	5·57
	Average profit in hauling one ton one mile.	2·54	2·26	2·34	2·27	2·15	2·25
	Average profit in hauling one ton one mile.	2·89	3·27	3·14	3·02	3·31	3·32
Madras and Southern Maharatta.	Average sum received for hauling one ton one mile.	5·95	6·57	6·63	6·00	5·35	4·82
	Average cost of hauling one ton one mile.	3·41	4·13	4·75	3·42	2·95	2·53
	Average profit in hauling one ton one mile.	2·54	2·44	1·88	2·58	2·40	2·29
South Indian.	Average sum received for hauling one ton one mile.	8·31	7·32	7·07	6·80	6·59	6·17
	Average cost of hauling one ton one mile.	4·02	3·79	4·16	3·82	3·65	2·33
	Average profit in hauling one ton one mile.	4·29	3·53	2·91	2·98	2·94	3·84

Note.—The average sum received for carrying one ton one mile or the average cost of haulage is largely governed by the largest items of traffic of a railway, *e g.*, coal on East Indian Railway and Bengal Nagpur Railway and wheat on the North Western Railway.

On the East Indian Railway and the Bengal Nagpur Railway the figures of cost of haulage for 1915 were 1·21 and 1·59 pies per ton per mile respectively, while those for the Great Indian Peninsula, the Bombay, Baroda and Central India, the Oudh and Rohilkhand, the North Western, and the Bengal and North-Western Railways were for the same year 2·51, 2·52, 2·60, 2·53 and 2·25 pies per ton mile respectively. Excepting the two coal carrying lines of Bengal, (East Indian Railway and Bengal Nagpur Railway), the circumstances of which in the matter of low cost of transportation are exceptional owing principally to coal traffic and low cost of fuel, the Northern Railways and the railways serving the Western ports, (*viz.*, the Oudh and Rohilkhand Railway, the North Western Railway, the Great Indian Peninsula Railway and the Bombay, Baroda and Central India Railway) have about the same average figure varying between 2·51 and 2·55 pies, the only exceptional case being that of the Oudh and Rohilkhand Railway, which had a slightly higher figure of 2·60 pies in 1915 only.

Thus the average cost of haulage of most important lines of Northern and Western India is between ·092 and ·095 pie per maund per mile or about $\frac{1}{11}$th pie per maund per mile—whereas the present minimum is $\frac{1}{10}$th pie per maund per mile.

The average cost of haulage does not, however, shew the actual cost of haulage of traffic like grain or seeds, which is comparatively cheap to carry owing to better loads and regularity in despatches, though not so cheap as coal or manganese. The average represents the cost of hauling and handling of all descriptions of traffic, including irregular and small consignments and bulky articles occupying more space in wagons than in proportion to its weight as well as of traffic for very short distances, which involve wagons standing for a longer period at stations than moving with loads. With a consignment for 50 miles the wagon will be standing 2 days (one day at the despatching station and one day at the receiving station), while it will be moving with load only one day. Therefore, the average statistical cost of haulage cannot help one in deciding what a particular consignment costs to haul, but it nevertheless gives a figure, which ought to assist in arriving at a decision in fixing the minimum rate for a large number of principal commodities taken together.

On the ground that there is a large empty running of wagons in the direction of Bengal it has been urged from time to time that it would pay the East Indian Railway and the Government to allow the East Indian Railway to carry traffic in such wagons at $\frac{1}{15}$th pie per maund per mile, as this figure is higher than their average cost of haulage. The traffic so carried will, however, be grain and seeds, now finding its way to the Western ports.

In the first place, it is to be mentioned that for traffic east of Cawnpore on the East Indian Railway on their main line, to Calcutta, they never took advantage of the present minimum of $\frac{1}{10}$th pie, although in many cases the difference in favour of Calcutta was less than Re. 0-4-0 per maund. It was held for many years that to effectively divert traffic to Calcutta a difference of Re. 0-3-6 and Re. 0-4-0 was necessary in favour of the Calcutta port in railway freight in order to counterbalance the lower steamer freights from the Western ports.

However, let us examine the position further. Taking Muzaffarnagar, the westernmost district of the United Provinces, on the North Western Railway, it will be found that if the North Western Railway stick to the present minimum of $\frac{1}{10}$th pie per maund per mile to Karachi and East Indian Railway are allowed to quote a minimum rate of $\frac{1}{15}$th pie per maund per mile from Ghaziabad to Calcutta, and the North Western Railway quote same rates to Ghaziabad

as the East Indian Railway charge on traffic from their line to the Western ports, the result would be as follows :—

To Karachi.

	Pies.
Muzaffarnagar to Karachi, 933 miles, at $\frac{1}{10}$th pie per maund per mile on the North Western Railway	93

To Calcutta.

Muzaffarnagar to Ghaziabad, 63 miles, over the North Western Railway at $\frac{1}{3}$ pie per maund per mile *plus* 9 pies terminal, same terminal as charged by the East Indian Railway on traffic to Bombay or Karachi from their line	30
Ghaziabad to Howrah, 891 miles, at $\frac{1}{15}$th pie per maund per mile	59
TOTAL .	89

Surely a difference of 4 pies per maund in favour of Calcutta will not enable that port to draw the traffic from Muzaffarnagar in competition with the Western ports. If the North Western Railway do not charge 9 pies terminal and are statisfied with 3 pies only the difference in favour of Calcutta will not be more than 10 pies, but even this will not divert traffic to Calcutta.

What the East Indian Railway will perhaps be able to do will be to divert traffic from stations on the length Cawnpore to Delhi on the East Indian Railway.

The year 1911 was a good year for grain traffic on the East Indian Railway. The following remarks appear on the Railway Board's Administration Report for that year :—

"The increase in the goods earnings on the East Indian Railway was chiefly due to heavy bookings of grain for export to Europe."

In 1911, the total weight of traffic in wheat and oil seeds to Bombay from the East Indian Railway stations was as follows :—

Names of stations.	Wheat.	Oil seeds.
	Tons.	Tons.
Viâ Delhi (Bombay, Baroda and Central India Railway).	1,002	..
Viâ Hathras	..	..
Delhi	..	98
Hathras city	25	..
Jubbulpore	8,426	1,875
Agra	590	3,011
Carried over .	10,043	4,984

Names of stations.	Wheat	Oil seeds.
	Tons.	Tons.
Brought forward .	10,043	4,984
Cawnpur	17,919	14,410
Katni	1,650	5,886
Viâ Jubbulpur	4,190	2,436
Viâ Cawnpur	3,026	9,709
Viâ Agra.	819	1,538
Viâ Manikpur	2,012	6,526
Via Katni	760	9,800
Viâ Delhi (Great Indian Peninsula Railway) .	159	238
TOTAL .	40,878	55,527

So that the total weight of traffic which it is expected to divert from the Bombay port to the Calcutta port from the East Indian Railway stations on the length Allahabad to Delhi, including the Jubbulpur branch, is say 96,405 tons—

40,878 tons wheat.
55,527 tons oil seeds.

96,405 tons.

It will be seen that most of the traffic which was carried from the East Indian Railway to Bombay was from stations on the length Allahabad to Cawnpur and the Jubbulpur Branch, as the despatches to Bombay were mostly *viâ* the junctions on the Jubbulpur line and from Cawnpur.

The rate at $\frac{1}{15}$th pie per maund per mile from Cawnpur to Calcutta would be Re. 0-3-6 per maund, and that from Jubbulpur to Calcutta, *viâ* the East Indian Railway, would work out to Re. 0-4-1 per maund. These two rates will generally rule the rates for other stations with a shorter mileage to Calcutta, unless it is proposed that the rates for longer distances should be lower than for shorter distances. Therefore taking Re. 0-4-0 per maund or Rs. 6-12-0 per ton (or say Rs. 7-0-0) and 96,405 tons as the weight of traffic, the East Indian Railway extra earnings on the traffic diverted to Calcutta from Bombay would be say Rs. 6,74,835.

Apart from the question as to what loss in money such reductions will cause to the East Indian Railway and to other lines on their existing traffic, which will be discussed later on, it may be observed that there are other important points for consideration :—

(1) The East Indian Railway empty running in the down direction (*i.e.*, towards Bengal) is up to coal districts only, say up to Sitarampur on the main line and up to Dhanbaid on the Grand Chord line.

(2) If therefore the grain and seeds traffic is diverted to Calcutta from the Western ports a few of the trains must run up to Calcutta, which will add to empty running of wagons from Calcutta to the coal district.

(3) There will be more trains thrown on the already congested section between Burdwan and Asansol, both in the up and down directions.

The Burdwan-Bandel section has been eliminated out of consideration because the newly opened Burdwan-Howrah Chord will afford relief by taking off the Howrah traffic from this portion of the main line.

(4) Almost the entire cultivable area in the United Provinces served by stations on the East Indian and the Oudh and Rohilkhand Railways is under cultivation and no further expansion can be expected unless there are feeder railways to the interior.

Now to deal with the effect of a special minimum rate of $\frac{1}{15}$th pie per maund per mile for the East Indian Railway on the existing traffic of the other lines and also of the East Indian Railway.

The rates to Calcutta from stations on the Oudh and Rohilkhand Railway, on the length Ghaziabad to Bareilly, Bareilly to Aligarh and Bareilly to Rai Bareilly, are based on the rates from stations similarly situated on the East Indian Railway length Delhi to Cawnpur and Cawnpur to Bindki. Unless the rates from the Oudh and Rohilkhand Railway stations to Calcutta are similarly reduced *viâ* Moghalserai, the traffic will be diverted to the East Indian Railway routes *viâ* Ghaziabad, *viâ* Aligarh and *viâ* Cawnpur to the detriment of the interests of the Oudh and Rohilkhand Railway and contrary to the traffic agreement of 1889 between the Oudh and Rohilkhand Railway and the East Indian Railway, which provides that the traffic to Calcutta from the Oudh and Rohilkhand Railway stations should take the Moghalserai route.

Apart from the question of fair treatment between the two railways, the despatchers of traffic on the Oudh and Rohilkhand Railway will be at a disadvantage, and even if the lower rates of the East Indian Railway are not applied *viâ* Cawnpur, *viâ* Aligarh and *viâ* Ghaziabad, the prevalence of low rates on the East Indian Railway will tend to divert the attention of the shippers to these marts, and the merchants there will be able to oust the buyers now doing business on the Oudh and Rohilkhand Railway.

The reduction of rates must, therefore, follow on the Oudh and Rohilkhand Railway not only up to Lucknow or Rai Bareilly but also from stations further east or else the rates for greater distances will be lower, and once the Oudh and Rohilkhand Railway rates are reduced the Bengal and North-Western Railway rates from stations situated on the north bank of Gogra must also come down in sympathy with the rates from the Oudh and Rohilkhand Railway stations on the south bank, as they always do. The East Indian Railway, when they made the proposal for a lower minimum than $\frac{1}{10}$th pie per maund per mile in 1905, asked that this might be extended to the Oudh and Rohilkhand, Bengal and North-Western and the Bengal Nagpur Railways in respect of Calcutta traffic. It is obvious that if the reduced minimum applies to East Indian Railway stations it must also apply to Oudh and Rohilkhand Railway stations, as the rates to Calcutta from the latter railway have for a number of years been fixed, having relation to the rates of the East Indian Railway stations.

The Great Indian Peninsula Railway, and the Bombay, Baroda and Central India Railway will have to come down in their rates to Bombay, and so must also the North Western Railway in their rates to Karachi to the minimum of $\frac{1}{10}$th pie per maund per mile in respect of traffic from the United Provinces to Bombay and Karachi respectively, in case they are not allowed a lower minimum also.

But it cannot be seen how the claim of the North Western Railway or of the Bombay lines, with an average cost of 2·5 pies per ton mile, to a lower minimum can be resisted if the Oudh and Rohilkhand Railway with an average cost of 2·6 pies is allowed the same minimum as the East Indian Railway. The East Indian Railway aim in reducing the minimum will not at all be attained if it does not apply to Oudh and Rohilkhand Railway traffic to Calcutta, because the grain and seeds traffic from the Oudh and Rohilkhand Railway stations is important. Its proportion however to Bombay is small as compared with the very large despatches to Calcutta so that the East Indian Railway will lose instead of gaining, because their proportion of the through rates to Calcutta from the Oudh and Rohilkhand Railway stations must be reduced. Further, the Bengal Nagpur Railway, whether they want to do it or not, will have to come down in their rates from their stations near Jubbulpur and near Katni in the Central Provinces to Calcutta in response to the East Indian Railway rates, meaning also reduction in rates from that Province to Bombay.

Then, again, taking the East Indian Railway stations, if the rate from Cawnpore to Calcutta is reduced to Re. 0-3-6 per maund (at $\frac{1}{15}$th pie per maund per mile for 633 miles), they will have to come down in their rates from all stations Cawnpore to Mokameh, and also stations on the loop line and stations on the Grand Chord line to this figure, for it will be difficult for them to retain higher rates to Calcutta from the stations named.

Further, if on the distance from Cawnpore to Calcutta for 633 miles, the East Indian Railway charge Re. 0-3-6, it is not clear how they will be able to retain a rate of Re. 0-2-4 per maund on Bombay traffic from say Khaga, only 69 miles from Cawnpore, without causing serious complaints of undue preference on the part of Bombay merchants.

The traffic in wheat, grain, pulse, and oil seeds booked from the East Indian Railway stations between Moghalserai and Delhi including the Jubbulpur line to Calcutta during 1911 was 163,899 tons. If the East Indian Railway reduce the rate at Delhi to Re. 0-5-0, at Cawnpore to Re. 0-3-6 and at Jubbulpur to Re 0-4-0, their rates will be affected right up to Sahebganj on the loop line as the rate from Sahebganj to Howrah is Re. 0-3-11 per maund for 219 miles

However, confining our observations to stations on the length Moghalserai to Delhi (excluding the Oudh and Rohilkhand Railway or the Bengal and North-Western Railway traffic) the amount of reduction between the present rates and the proposed rates of say Re. 0-5-0 for all stations Delhi to Cawnpore and Re. 0-3-6 for stations Cawnpore to Moghalserai and Re. 0-4-0 to Re. 0-3-6 for stations on the Jubbulpur line will be not less than Re. 0-2-6 per maund or say Rs. 4-4-0 or Rs. 4-0-0 per ton or will involve a loss of about Rs. 6,55,000 on 163,899 tons against the gain of Rs. 6,73,510 expected from the diversion to Calcutta of traffic to Bombay from the East Indian Railway stations.

But there are also bound to be reductions in the rates for traffic from stations on the Oudh and Rohilkhand Railway and the Bengal and North-Western Railway. The total weight of the grain and seeds traffic from these two railways during 1911 was as follows :—

	Tons.
Viá Moghalserai	292,848
Viá Mokameh	235,347

If the rates from the Oudh and Rohilkhand Railway and the Bengal and North-Western Railway stations are adjusted on the same principle as they are now adjusted (*viz.*, that the rates must bear relation to the East Indian Railway rates and that the rates for longer distances should not be higher than for shorter distances and that the rates should be divided on mileage) the loss to the East Indian Railway will not be less than Re. 0-1-6 per maund or (Rs. 2-8-0 per ton) on Oudh and Rohilkhand Railway traffic and Re. 0-1-0 per maund (Rs. 1-11-0 per ton) on the Bengal and North-Western Railway traffic.

Further these two lines (Oudh and Rohilkhand and the Bengal and North-Western Railways) will also be bound to make proportionate reductions towards Bombay as well, because even as rates stand at present they are much higher distance for distance say from the Oudh and Rohilkhand Railway to junctions with the Bombay lines than to Moghalserai. The position will be untenable if further reductions are made to Moghalserai for Calcutta over the Oudh and Rohilkhand Railway or to Mokameh over the Bengal and North Western Railway because corresponding reductions will be strongly urged by Bombay, and it is doubtful whether this could be resisted when rates for shorter leads for Bombay traffic become higher than rates for longer leads on Calcutta traffic and reductions in rates to Bombay must follow; so that while perhaps the present difference in favour of Calcutta and against Bombay will be maintained from the Oudh and Rohilkhand Railway the actual rates will be lower, meaning all round loss in revenue to the East Indian, the Oudh and Rohilkhand, the Bengal and the North-Western Railways and also to the Bombay and to the Karachi lines with remote chances of increasing the business.

Under the circumstances, it is obvious that preferential minimum will not be very practicable for the Calcutta lines, and it is also doubtful, whether taking the present average cost of haulage of the railways of India, the time for reduction in the present minimum has yet arrived, except perhaps for cattle fodder, (oil cake included) and minerals.

CHAPTER VIII.

ECONOMICS OF TRANSPORTATION.

The scope of a chapter on Economics of Transportation in a book on Railway Rates is necessarily limited, and only such phases of transportation as bear directly on traffic on long and short hauls or in large and small loads or on the earning capacity of wagons can be touched upon.

Cost of operation

In the last chapter, the average cost of haulage of goods on different lines was discussed. The average cost by no means represents the actual cost, and while the average shows reduced figures for traffic in small lots or bulky or light weight goods, which are expensive to handle, it, at the same time, exhibits figures of cost of traffic in full wagon loads or in train loads on a higher basis.

It is generally held that it pays a railway to carry full wagon load traffic for long distances at a cheaper rate per unit mile than traffic for short distances.

Where, however, as in India, the leads are very long in some cases it is difficult to say what short lead traffic is, unless comparisons are drawn between specific distances.

Taking the cost of maintaining the permanent way, stations and the station staff at a fixed figure, and the supervision and general charges as constant, and the cost of repairs to rolling stock the same as in the case of long and short distance traffic and the running expenses at a fixed figure per hour or per day it is apparent that more a wagon (the space in which is the commodity for sale in Railway goods transportation) earns per day the better it is for a railway.

Wagon earnings per day an important factor.

Let us now proceed to examine the results in "wagon per day earnings" on long and short hauls; it is generally accepted that while the traffic for long hauls, especially to and from ports, is in wagon loads, that carried locally for short distances is in small lots, although this is not universally so. Moreover, short distance traffic over a railway may be destined to a port, but giving the railway, on which it originates only a short haul.

Example 1.—Suppose a railway charges grain in full wagon loads, for distances of over 300 miles at $\frac{1}{8}$th pie per maund per mile, and for short distances at $\frac{1}{3}$rd pie per maund per mile up to 75 miles, and $\frac{1}{4}$th pie per maund per mile for distances in excess of 75 and up to 150 miles, and 150 to 300 miles at $\frac{1}{5}$th pie per maund per mile, (the charge for distances up to 75 miles being the same for small as well as for big lots because the maximum rate permitted by the Government is $\frac{1}{3}$rd pie per maund per mile).

Therefore if a consignment of grain weighing 200 maunds is despatched for 50 miles the freight earned will be :—

50 miles × $\frac{1}{3}$ pie per maund per mile.
=16·6 pies *plus* 3 pies short distance terminal.
=19·6 or 20 pies or Re. 0-1-8 per maund.
=Re. 0-1-8 × 200 maunds=Rs. 20-13-0.

Allowing one day for loading, one day for unloading, etc., at destination, and one day in transit the earning per day will be Rs. 6-15-0.

If the wagon has to come back empty all the way and one day extra is taken for the return journey the earning per day will be reduced to Rs. 5-3-0.

Example 2.—But if the same wagon is employed for 350 miles and the charge on the entire distance is levied at $\frac{1}{6}$th pie per maund per mile and the load in a wagon is 380 maunds, the freight earned will be—

350 miles × $\frac{1}{6}$th pie per maund per mile=58 pies or Re. 0-4-10 per maund.
Re. 0-4-10 per maund × 380 maunds=Rs. 114-0-0.

Taking one day for loading and one day for unloading, and the average miles run per day at 70, the total time occupied in transit will be—

1 day at despatching station.
1 day at receiving station.
5 days in transit (350 miles ÷ 70 miles per day =5 days.) or, a total of 7 days.

Therefore Rs. 114 ÷ 7=Rs. 16-4-7 per day.

However, if the wagon has to return empty all the way without a back load and another 5 days are added for the return journey, the earning will be—

7 days *plus* 5 days =12 days.
Rs. 114 ÷ 12=Rs. 9-8-0 per day.

In case the average run per wagon per day were 80 miles the time taken by the wagon to return to original station will be 11 days.

1 day at despatching station.
1 day at receiving station.
9 days during transit (350 miles ÷ 80 miles a day =4·4 days ; 4·4 × 2=8·8=9 days.)

the earning power per day would then be Rs. 114 ÷ 11 days= Rs. 10-5-10 per day.

Example 3.—But if the long distance traffic be for say 633 miles and the rate charged be ·133 pie per maund per mile and the load be 380 maunds in a wagon, the result would be as follows as compared with the rate of ⅓ pie up to 75 miles and ¼th pie 75 to 125 miles on a lead of 125 miles on traffic of similar wagon load.

(*a*) 380 mds. × Re. 0-7-0 per maund (freight for 633 miles at ·133 pie per maund per mile)=Rs. 166-4-0 or say Rs. 166.

Taking 70 miles as the wagon mile run per diem, 633÷70 equal 9 days in transit, and if 2 days are allowed for sending and receiving stations, the total time occupied would be 11 days.

Therefore 166÷11 give a wagon per day return of Rs. 15.

(*b*) Freight for 125 miles :—

	Pies.
First 75 miles × ⅓	25
Next 50 miles × ¼	13
	38 or Re. 0-3-2 per maund.

Rs. 0-3-2 × 380 maunds=Rs. 75-3-0.

At the rate of 70 miles per day, 125 miles will take say 2 days for a wagon to complete the run, *plus* 2 days as usual for loading and unloading make 4 days.

Thus Rs. 75÷4=Rs. 18-12-0 per wagon per day.

In a case like this, short distance traffic is not a less paying traffic than long distance traffic from the point of view of wagon earning per day, and it is to be noted that neither block rates nor any terminals have been taken into account in arriving at the rate for 125 miles and at the same time ·133 pie rate for 633 miles is also a very fair rate for this lead.

If however, the vehicle mileage attained in a day were 90 miles and the total time occupied reduced by 2 days, *viz.*, to 9 days the "wagon per day" return on traffic for 633 miles would have been Rs. 18-7-0 or very much near the figure obtained for 125 miles lead.

In the case of example (3) the empty running has not been taken into account, because if it is done the return per wagon per day on long lead traffic will be much less than on short lead traffic thus :—

(*a*) *For* 633 *miles* —

(1) at 70 miles per day=9 days, ×2=18 days
18 days +2 days=20 days
Rs. 166÷20=Rs. 8$\frac{3}{10}$

(2) at 90 miles per day=7 days, ×2=14 days
14 days+2 days=16 days
Rs. 166÷16=Rs. 10⅜

(*b*) *For* 125 *miles*—

At 70 miles per day=2 days, ×2=4 days
4 days+2 days=6 days
Rs. 75÷6=Rs. 12½ per day.

It will thus be seen that if a railway hopes to give low rates for long distance traffic in order to develop it by attaining a wider range of customers for the productions of the districts served by it, and at the

Long distance traffic requiring quick release *of wagons in order to give wagons at reasonable earning per day.*

same time not to diminish the return per wagon per day considerably, the work done by a wagon per day must increase, and as there is a large amount of traffic that is interchanged between railways and as when one railway's wagon goes on another line it does not earn more than Rs. 2-4-0 per day (for broad gauge) and Rs. 1-2-0 (for metre gauge), it is necessary in the interests of all railways to turn round wagons quickly on long distance traffic carried at cheap rates.

A statement is appended below giving a comparison of figures under the following heads between the years 1907 and 1914-15 in respect of the Bengal Nagpur, the Bombay, Baroda and Central India, the East Indian, the Eastern Bengal State, the Great Indian Peninsula, the North Western and the Oudh and Rohilkhand Railways :—

(1) Number of goods wagons.
(2) Total number of engines.
(3) Average number of miles run per each goods vehicle per diem.
(4) Average miles run per locomotive per diem.
(5) Average load of a loaded goods vehicle in tons.
(6) Average load of a goods vehicle (including both loaded and empty) in tons.
(7) Average load of a goods train in tons.
(8) Average through speed of trains—miles per hour.
(9) Broad gauge mileage worked by each railway.
(10) Number of stations.
(11) Quantity of goods and minerals carried in tons.

	NUMBER OF GOODS WAGONS.		TOTAL NUMBER OF ENGINES.		AVERAGE NUMBER OF MILES RUN PER EACH VEHICLE PER DIEM.		AVERAGE MILES RUN PER LOCOMOTIVE PER DIEM.			AVERAGE LOAD OF A LOADED GOODS VEHICLE PER MILE IN TONS.			
							1907.		1914-15.	1907.		1914-15. (a)	
	1907.	1914 15.	1907	1914-15.	1907.	1914-15.	1st half.	2nd half.		1st half.	2nd half.	1st half.	2nd half.
Bengal Nagpur Railway	8,709 Increase 5,712 or 65 per cent.	14,421	304	468	43 Decrease 9 per cent.	39	74·54 71·725 Decrease 5 per cent	68·91	68	11·45 10·69	9·93	12·25 12·34	21·43
Bombay, Baroda and Central India Railway.	5,300 Increase 4,066 or 76 per cent.	9,366	235	349	35 Decrease 14 per cent	30	69·25 64·22 Increase 1½ per cent	59·19	65	10·66 9·605	8·55	9·82 10·105	10·39
East Indian Railway	20,742 Increase 13,233 or 63 per cent	33,975	943	1,217	53 Decrease 11 per cent.	47	78·43 75·575 Increase ¼ per cent.	72·72	76	10·92 10·955	10·99	13·53 13·975	14·42
Eastern Bengal Railway	4,659 Increase 1,968 or 42 per cent	6,627	206	287	28 Decrease 3 per cent	27	71·78 74·8 Decrease 12 per cent	77·85	66	6·41 6·915	7·42	5·97 6·41	6·85
Great Indian Peninsula Railway.	12,905 Increase 4,865 or 37 per cent	17,770	828	1,145	51 Decrease 31 per cent.	35	67·61 62·7 Decrease 6 per cent.	57·79	59	9·76 8·895	8·03	9·64 10·27	10·90
North Western Railway	13,906 Increase 12,858 or 92 per cent	26,764	865	1,335	53 Decrease 45 per cent	29	73·73 75·18 Decrease 29 per cent	76·63	53	11·07 10·96	10·85	11·44 10·74	10·04
Oudh and Rohilkhand Railway	5,644 Increase 2,126 or 38 per cent	7,770	268	276	33 Decrease 12 per cent.	29	84·13 85 Decrease 20 per cent	85·89	68	7·21 7·735	8·26	6·98 7·875	8·77
TOTAL	71,865 Increase 44,828 or 62 per cent.	116,693	3,649 Increase 1,428 or 39 per cent.	5,077	[illegible] =42 Average Decrease 9 or 21 per cent	[illegible] =33 Average	[illegible] =72 Decrease 7 or 10 per cent	[illegible] =65		..	..	..	..

(a) NOTE.—As the comparison is between two half-years not corresponding to one another the average for the year has also been shown for both the years.

	AVERAGE LOAD OF A GOODS VEHICLE (INCLUDING BOTH LOADED AND EMPTY) PER MILE, IN TONS.				AVERAGE WEIGHT OF A GOODS TRAIN PER MILE IN TONS.						AVERAGE THROUGH SPEED OF TRAINS, MILES PER HOUR.							
	1907.		1914-15. (a)		FREIGHT.		DEAD WT.		TOTAL		1907.				1914-15.			
	1st half.	2nd half.	1st half.	2nd half.	1907.	1914-15	1907.	1914-15	1907.	1914-15	1st half.		2nd half.		1st half.		2nd half.	
											Goods	Mixed.	Goods.	Mixed.	Goods.	Mixed.	Goods.	Mixed.
Bengal Nagpur Railway	8·21 7 70	7·19	8 16 8 25	8·34	218·76	244 92	..	..	496·08 Increase 76 or 15 per cent.	572·18	11·93	17 63	10·68	17 04	10 00	20·00	10·00	20 00
Bombay, Baroda and Central India Railway.	8 19 7 44	6 69	6·97 6 96¼	6 95	332 60	229·98	..	..	686 18 Decrease 80 or 12 per cent.	606 84	9 96	15 85	9 95	15·18	7 95	15 14	7·94	14·76
East Indian Railway	7 45 7 365	7 28	8 42 8 675	8 93	266·66	300 21	..	..	611·85 Increase 69 or 11 per cent.	680·85	16 00	16·70	16 00	17·00	15·00	17 20	16·30	18·20
Eastern Bengal Railway	5 08 5·21	5·34	4 71 4·96	5·21	153·42	170·01	..	..	468 00 Increase 95 or 20 per cent	563·17	15 00	14·30	15 00	14·30	11·26	12·50	11·91	12·13
Great Indian Peninsula Railway.	7·42 6·87	6 31	7 62 8 03	8 44	183 82	184 29	..	..	461·11 Increase 28 or 6 per cent.	489 08	10 27	15 31	11 65	15 22	12·45	15·14	10·08	14·82
North Western Railway	8·73 8 485	8 24	8 55 8 14	7·73	212 89	261 10	..	..	474·23 Increase 140 or 29 per cent.	614 18	11 00	14·69	11 00	14·50	10·44	13·82	10·29	13·80
Oudh and Rohilkhand Railway	5·83 5·86	5 89	4·93 5·67	6 41	165 56	128 03	..	..	445·39 Decrease 11 or 2½ per cent.	434·69	9·19	16·79	9·43	16·35	11·87	16·71	12·34	15·83
TOTAL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

(a) **NOTE.**—As the comparison is between two half-years not corresponding to one another the average for the year has also been shown for both the years.

—	BROAD GAUGE MILEAGE WORKED BY EACH RAILWAY.		NUMBER OF STATIONS.		QUANTITY OF GOODS AND MINERALS CARRIED IN TONS.	
	1907.	1914-15.	1907.	1914-15.	1907.	1914-15.
Bengal Nagpur Railway	1728·94	1875·29	252	304	4,088,695 Increase 2,173,184 or 53 per cent.	6,261,879
Bombay, Baroda and Central India Railway.	876·90	1324·86	150	207	2,274,346 Increase 583,892 or 25 per cent.	2,858,238
East Indian Railway	2504·43	2771·17	427	479	11.100,174 Increase 3.887,183 or 35 per cent.	14,987,357
Eastern Bengal Railway	503·57	525·12	154	157	3,273,471 Increase 959,974 or 29 per cent.	4,233,445
Great Indian Peninsula Railway.	2871·44	[illegible]	4[illegible]4	471	4,446,611 Increase 1,226,189 or 27 per cent.	5,672,800
North Western Railway	4226·38	4971·8[illegible]	641	824	5.241,859 Increase 688,853 or 13 per cent.	5,930,712
Oudh and Rohilkhand Railway	1253·46	16[illegible]	1[illegible]	293	1,827.567 Increase 98.727 or 5 per cent.	1,926,294
TOTAL	13965·12 Increase of 16 per cent.	16144·[illegible]	....	....	32,252,723 Increase 9,618,002 or 29 per cent.	41,870,725

Results of increase in rolling stock as seen in the work done per wagon

Basing on these figures given in the foregoing table the results for some of the Northern India Railways taken together (*viz.*, Bengal Nagpur, Bombay, Baroda and Central India, East Indian, Eastern Bengal State, Great Indian Peninsula, North Western and Oudh and Rohilkhand Railways for their broad gauge systems only) are as follows when the two years' figures referred to therein are compared :—

No.	—	Calendar year 1907.	Official year 1914-15.	Increase or decrease percentage.
				Per cent.
1	Total quantity of public merchandise (including minerals) carried in tons.	32,252,723	41,870,725	+29
2	Total number of broad gauge miles worked by these railways.	13,965	16,144	+16
3	Total number of wagons . . .	71,865	116,693	+62
4	Total number of engines . . .	3,649	5,077	+39
5	Average number of miles run by each goods vehicle per diem.	42	33	—21
6	Average number of miles run by each locomotive per diem.	72	65	—10

While these average figures do not certainly give accurate results for each railway, they approximately give a fair idea of the results achieved under each head except only under item (6) where only the East Indian Railway and the Bombay Baroda Railway show an increase instead of a decrease.

The feature in these comparative figures is that while there has been an increase of 62 per cent. in the wagon capacity, the work done by wagons has been considerably less in that the average number of miles run by each goods vehicle per diem has come down from 42 to 33 miles or by twenty one per cent (21 %).

Similarly, the average number of miles run by an engine per day has come down by 10 per cent. The increase of 39 per cent. in the number of engines has, it seems, resulted in minimising the work done by an engine per day. Taking two of the Calcutta lines it is found, in comparing the calendar year 1907 with the official year 1914-15, that on the East Indian Railway there was an increase of 35 per cent. in tonnage of traffic as compared with an increase of 63 per cent. in wagon capacity and 29 per cent. in number of locomotives, but we find a decrease of 11 per cent. in the miles run by each wagon per diem. On the Bengal Nagpur Railway there was an advance of 53 per cent. in the weight of merchandise and minerals carried, with rise of 65 per cent. in the number of wagons, but there was a drop in the number of miles run per wagon per day by 9 per cent. and that done by locomotives by 4 per cent. The North Western made an addition of 92 per cent. to its wagons in seven years and of 54 per cent. to its number of engines, but it is very striking that while in 1907 the average number of miles done by a wagon per day was 53, it came down to 29 miles in 1914-15, or there was a decrease in the work done by a wagon by 45 per cent. Somewhat similar results are also observed in respect of the work done by engines on the North Western Railway, where the average number of miles done by an engine was 74 and 77 in the 1st and 2nd halves respectively in the year 1907, against 53 miles only the average number of miles run by an engine in 1914-15, or a decrease of nearly 30 per cent., although there was a rise of 29 per cent. in the average load of a goods train per mile on the North Western Railway.

The average speed of goods trains on the following railways was—

Average through speed of goods train—miles per hour.

— —	First half of the calendar year 1907 (miles per hour).	First half of the official year 1914-15 (miles per hour).
Bengal Nagpur Railway	11·93	10·00
Bombay, Baroda and Central India Railway .	9·96	7·95
East Indian Railway	16·00	15·00
Eastern Bengal Railway	15·00	11·26
North Western Railway	11·00	10·44

On all these railways there was a decrease in the number of miles run per hour. Although the decrease per hour seems low and may be regarded as insignificant an analysis of the figures shew that even taking the case of the East Indian Railway there was a decrease of 6 per cent. in the speed of every goods train per hour and on the Bengal Nagpur Railway the decrease was 16 per cent., and on the Eastern Bengal Railway the decrease of 3·74 miles per hour means a reduction in the run of every goods train per hour by 25 per cent. When the train expenses are taken per hour and each hour is multiplied into 24 hours and the hours converted into a day and the days into weeks, months and a year, a large figure will be arrived at for each railway.

It may be argued by some that an increase in wagons only takes place when it is found that the number on the line is insufficient and that generally every endeavour is made to get as much work out of the existing wagons as possible before more wagons are asked for, and, therefore when wagons are added the figures of work done per wagon go down for the increased number. This is true to a certain extent, but it would generally be believed that in 7 years, the time occupied in transit would decrease instead of increasing, but that it was not so is apparent, especially when it is seen that the average speed of goods trains went down besides the work done by wagons being less.*

Some reasons suggestions for improvements.

But what are the causes which underlie the delays in movement of wagons or trains is a matter which requires investigation by itself. The causes may be many, and some of them are noted below. The delays may be due—

(1) either to the increase in the number of wagons having taken place without first attempts being made to get more work out of the wagons by spending money in improvement of facilities in the way of more passing sidings, reduced block sections by adding to the number of passing and crossing stations, better facilities in yards at terminal, changing and junction stations. Of course it will be said that all this means money. This is true, but experience shows in one or two cases part of the money spent on wagons might have been better spent on more facilities, *vide* Appendix IV.

(2) or to defects in the system of marshalling or grouping wagons or trains. It is generally believed by the staff at a marshalling station (*i.e.*, at a terminal or a changing station, wherefrom goods trains are started) that so long as wagons on the train are marshalled for the section (for goods trains are mostly sectional trains) over which the train is run it is sufficient, thus meaning that at the end of the section marshalling has to be done again. This must cause delays in yards. It is believed that the "rate of movement of wagons depends upon various causes, the principal being the length of time a wagon is standing at stations or in sidings as compared with the time occupied in actual transit;"

(3) or to defective or inadequate marshalling yards involving too many back shunts which prevent wagons always moving in the yard in the direction of the destination station;

(4) or to want of through time tables for most goods trains in preference to sectional time tables.

Sectional or work trains are said to be more useful in being utilised as feeders to through trains and it is remarked by some that if they start every morning from each end of a section and pick up loads and deliver empties and *vice versâ* and bring wagons to the nearest changing stations to be attached to through trains (even if this means taking wagons for a few miles in the opposite direction, to which it is intended to go) it would save delay to wagons and trains. Through trains are most useful in clearing long distance traffic and some say even loads can be sacrificed to a certain extent if fast through trains can be arranged. The late Mr. T. Robertson, C.V.O., Special Railway Commissioner, made a strong point of this.

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* The speed of trains is to no small extent dependent on clear block section.

(5) or due to cross return of empties ;

(6) or to want of utility of wagons for return loads by diversion from the original route on the return direction (even to foreign lines) or being detained for loads.

It is admitted that there is nothing new in these remarks, but there are cases where improvements can be made ; for instance, co-operation between railways in marshalling wagons even in station order beyond junctions for foreign railways will attain better results. For this purpose if wagons are detained at a changing station to form train loads even for a foreign railway it will mean saving in time and quick turning round of wagons in the long run. The East Indian Railway coal traffic Route Table, which shows all the stations on every railway in India both in alphabetical and in station order (alphabetically in the index), together with a good map in number takers' office, will assist greatly in marshalling wagons for foreign lines.

During pressure of traffic it is not always possible to detain wagons for a load and this involves heavy empty running, but in many cases if a diversion off the original route to a foreign railway would mean return load for part of a distance on the return journey it would be advisable in some cases to agree to such an arrangement, for this will minimise cross return of empties.

Co-operation between departments is most essential and even if two branches of the traffic department, *viz.*, transportation and commercial, will co-operate, better results can be attained. For instance, the rates department that fixes the rate knows what the traffic conditions are, the directions in which the traffic flows, to what extent wagon load traffic and wagon load rates are practicable having regard to the free development of traffic, and whether wagons of higher capacity are needed or not. And one instance will shew what co-operation between the two departments means. When the coal rates were reduced in 1906 there occurred in 1907 a difficulty in the Coal District in the matter of routing of traffic, which had developed for every important station in India. This caused not only delays and congestions in the starting yards and at the invoicing stations but resulted in large number of misdespatches and wrong routings meaning delays to wagons. In many cases the wagon was labelled by a number taker and the route shewn by him as far as his knowledge permitted and the wagon was sent on, in order to avoid delays in a yard, before the invoice clerk could ascertain the correct route by reference to maps and the tariffs. But this was put a stop to by introduction of route table by the Rates Department on the East Indian Railway and the following directions at the commencement of the Coal Route Table will shew the utility of it :—

" To ascertain the route for coal all that is necessary is—

(*a*) To find the name of the destination station from the alphabetical list of stations at the beginning of this pamphlet.

(*b*) Against the station named is given a page reference, on turning up which will be found the route to the required destination.

As for example, in booking coal to Itarsi, Great Indian Peninsula Railway—

Itarsi will first have to be turned up in the Alphabetical List of stations and will be found on page XVII. Against Itarsi on page XVII of the Alphabetical List, reference is made to page 17. On page 17 being turned up it will be found that the route to be followed in booking to Itarsi is *viâ* Jubbulpore and the traffic should be routed accordingly.

The time tables of some railways show that the proportion of the number of through goods trains to sectional goods trains is not yet large. It is true that the East Indian Railway run through goods trains from Howrah and Docks to the coal districts and *vice versâ*—

and

Between Moghalserai and Calcutta
,, Ghaziabad and Calcutta
,, Asansol and Moghalserai
,, Calcutta and Cawnpore
,, Calcutta and Mokameh

or the Great Indian Peninsula Railway for instance

Between Bombay and Jubbulpur
,, Bombay and Delhi
,, Bombay and Cawnpore
,, Bombay and Nagpur
,, Bombay and Harda
,, Nagpur and Bhusaval and Manmad.

Excepting the van goods trains the North Western Railway goods trains appear to be all sectional goods trains, due perhaps to a certain extent to their being so many junctions and parallel branches.

The Bengal Nagpur Railway run a number of through goods trains between Waltair and Kharagpur, a distance of 475 miles, and one or two trains between Calcutta and Adra and Nagpur, (besides the through coal trains and return empty trains between Shalimar and Adra), but through coal trains between the Bengal coal districts and Katni do not appear in their working time tables.

Another factor that seems to militate against economical operation and increases the haulage of empty capacity is the high capacity of wagons on many railways, which do not need them. High capacity wagons are said to assist in securing better train and wagon loads. It is admitted that better wagon loads means fewer wagons. Fewer wagons mean less siding room at terminus. Fewer wagons for a given tonnage mean less cost and as number of wagons regulate train loads better wagon loads mean less train mileage and reduced working costs and therefore a few years ago there was a talk of bogie wagons being employed on Indian Railways more freely. But unless the improvement in wagon loads corresponds to the increase in the capacity of wagons the increase in the number of high tonnage wagons means more waste of transportation and consequently larger costs.

Rise in wagon capacity considered unnecessary.

Comparing the figures of average capacity and the average load per wagon from 1900 to 1912 the following results are seen. 12 years is a fairly long period to allow for determination of defects or improvements. The year 1912 was a good year for traffic and was previous to the war.

—	Average carrying capacity.		Average load per wagon.	
	1900 Tons.	1912 Tons.	1900 Tons.	1912 Tons.
East Indian Railway . .	14·5	16·3	7·12	8·5
Bengal Nagpur Railway .	13·96	15·39	6·14	7·81
Oudh and Rohilkhand Railway	11·1	14·6	4·77	7·84
North Western Railway .	12·9	18·48	5·94	6·96
Great Indian Peninsula Railway.	13·66	16·29	5·38	8·14
Bombay, Baroda and Central India Railway.	12·2	17·94	4·98	7·30

Whereas there were large increases in carrying capacity hauled the improvement in wagon loads except on the Oudh and Rohilkhand Railway and the Great Indian Peninsula Railway was not at all marked, and, in all cases, far below the carrying capacity.

It is extremely doubtful from these results whether it was wise to have increased the capacity of wagons except on the coal carrying lines.

The North Western Railway is a big grain-carrying line but it will be seen its average load was not high. Wagons of higher capacity for coal are useful, but similar capacity wagons do not appear to be equally useful with any other traffic on a large scale. It may be said that with grain and seeds traffic also it should be possible to get good wagon loads but exeperience in India shows otherwise.

For a number of years the lowest rates on the Bombay lines have been actual weight rates as it is found that wagon load rates would restrict the power of the merchants in importing grain freely into Bombay. Therefore the low rates for grain and seeds on the Great Indian Peninsula and the Bombay, Baroda and Central India Railways to Bombay are on actual weight, *i.e.*, they were applicable alike to both large and small lots.

The traffic is collected from a number of stations, and each station, which collects and sends traffic, is fed by carts; carts do not take more than 20 maunds, and therefore it would require 20 cart loads to make up a wagon load. Further, every station has not got a big shed (or even a moderate sized covered shed) and there are not many places where there are godowns close to the station for storing goods and as such temporary storage means cartage or handling again from the godown to the railway station the merchants prefer to book their goods as they come in by carts, except at big places where there are marts or "mundies" where middlemen buy and sell generally at a profit to the shipper or shipper's agent. It often happens that goods waiting at the stations to make up a wagon load or waiting for wagons are damaged by rain, and this makes merchants at small stations anxious to get their goods away as soon as they arrive at the Railway station from the interior. This cannot assist in a large number of wagons with full loads leaving a station at one time.

The North Western Railway also do not impose the wagon load condition on grain rates to Kurachee.

The East Indian Railway for a number of years stuck to wagon load conditions not only in respect of grain rates on its own line but also in respect of through rates for grain and seeds from the Oudh and Rohilkhand and the Bengal and North-Western Railways, but the East Indian Railway have also waived the conditions for all traffic from the United Provinces to Calcutta whether from the East Indian Railway or the Oudh and Rohilkhand or the Bengal and North-Western Railways.

The Bengal Nagpur Railway rates from the majority of their important stations in the Central Provinces to Bombay are of necessity "actual weight" rates because they are maximum rates.

It will be seen therefore that there is no inducement to merchants in the way of cheaper rates to collect and despatch traffic in wagon loads.

One feature, however, that has assisted wagons in getting anything like a good load in recent years, in spite of the fact that the railway rates for large and small lots are the same, is that there has been almost a continuous scarcity of wagons for a long time past, and, there fore, the merchants, when they do get a supply of empties at a station, make the best use of them, for they do not know when the next supply will come. There is no doubt, however, that the "actual weight" rates have greatly assisted in the development of business, because men with small capital have been enabled thereby to despatch on their own account, thus avoiding interest on a larger capital, (which would otherwise have to be borrowed from the money lender by the small dealer) and the commission agency charges. The development of business at small stations is generally done by small dealers.

Jute or cotton do not give such good loads as grains; large quantity of jute is carried in "kutcha" bales and cotton is also carried in "half pressed" bales. The wagon load restriction does not apply to full pressed cotton rates on the Great India Peninsula Railway; their rates for cotton are on actual weight.

The average load on the Eastern Bengal Railway with a big jute traffic was 6·41 tons during 1914-15.

With such conditions prevailing under which it is not considered advisable to apply "wagon load" restrictions to rates for grain or cotton to the ports or to sugar and other articles despatched to the interior from the ports, and seeing that a very large portion of the Indian Railway traffic is to or from the ports, it is extremely doubtful whether the capacity of wagons generally should be high on the Indian Railways on the example of American lines.

The conclusion to be drawn from analysis of the figures given is irresistible, namely that questions of the capacity of stock cannot be determined merely on general principles of economic operation; but always due regard must be had to the varying nature of the traffic and the general trend of movement.

The following extract from "Railways," dated Calcutta the 16th October 1917, will be interesting as it bears on the above referred to point.

"The average freight load in an Indian wagon for the latter half of 1915-16 was 10·8 tons, the wholesale introduction of vehicles of 40 tons, 60 tons and 100 tons capacity would doubtless enable heavier wagon loads of coal and other heavy commodities in bulk to be carried, and so probably increase the average wagon load; but it would at the same time enormously increase the dead-weight or unproductive load hauled owing to the impossibility of getting full wagon loads of general merchandise. Except in the case of special staples, it is impossible to ensure full loads at all times in large capacity wagons. In this connection, the following summary extracted from the Indian Railway Administration Report is interesting:—

Average Weight of Goods Trains, 1915-16.

—	Freight.	Dead-weight.	Percentage.	High Capacity Bogie wagons.
	Tons.	Tons.		
East Indian Railway	317	391	23	*Nil.*
Bengal-Nagpur Railway	282	351	24	*Nil.*
Great Indian Peninsula Railway	233	342	46	604
North-Western Railway	258	376	45	579

In other words, for every 100 tons of freight, the East Indian Railway hauled 123 tons dead-weight and the Great Indian Peninsula 146 tons.

The gross ton goods mileage (dead-weight and freight) for the four railways for the year 1915 was as follows :—

East Indian Railway	11,149,003,000
Bengal-Nagpur Railway	3,746,857,000
Great Indian Peninsula Railway	7,157,045,000
North-Western Railway	5,968,059,000

The average cost of moving 1,000 gross ton miles for the four railways is Rs. 4·27, but if we take only Rs. 4 as average, and assuming it costs the same to move 1,000 ton miles dead-weight, it will be observed what latent possibility of vast savings there is on the Great Indian Peninsula and North-Western Railways by reducing their dead-weight hauled per 100 tons of freight load; it is certain, however, that this result will not be obtained in the conditions of traffic in India, by the extended use of high capacity bogie wagons. A mere increase in wagon capacity, that is large dimensions and great weights, as advocated by X without regard to the average load offering, will not conduce to economical transportation.

The following figures show the increase of wagon capacity in the last five years :—

—	Average wagon.	Capacity.	Increase.
	1911.	1915.	
	Tons.	Tons.	Tons.
Bengal-Nagpur Railway	16·05	17·00	·95
East Indian Railway	16·25	17·45	1·20
Great Indian Peninsula Railway	16·01	17·37	1·36
North Western Railway	17·98	19·47	1·49

It might be expected that the Great Indian Peninsula and the North-Western Railways with the largest increase in wagon capacity would show to advantage in a comparison of freight and dead-weight train loads. But what do we find ? Let the figures speak for themselves :—

Percentage of Dead-weight Load over Freight Load.

—	East Indian Railway.	Bengal-Nagpur Railway.	Great Indian Peninsula Railway	North Western Railway.
	per cent.	per cent.	per cent.	per cent.
1911	22	35	56	54
1912	17	37	49	50
1913-14	23	31	39	32
1914-15	22	31	54	40
1915-16	23	24	46	45

Loss of money in capital and increase in expenditure due to wagon load not rising corresponding to rise in capacity.

The North-Western Railway, which had the largest increase in wagon capacity, shows some tendency to increase its percentage of dead-weight hauled to freight load, while the Great Indian Peninsula Railway shows fluctuating results. The Bengal-Nagpur Railway, on the other hand, shows a steady decrease in the percentage of dead-weight to freight hauled, while the East Indian Railway is more or less steady at a relatively low figure."

The better utilization of wagons is a matter of primary importance From the details given in the preceding pages and in *Appendix IV* to this chapter it would appear that in the past the tendency has been to increase the wagon supply without a corresponding increase being effected in transportation capacity of the various railways, with the result that it has been impossible to move wagons as freely or utilize them as fully as has been done in the earlier years. It must be borne in mind that unless the movement capacity is increased in correspondence with the increase in the number of wagons, additional stock merely serves to accentuate difficulties and render congestions more probable and frequent.

Net profit on basis of average statistical cost of working.

In this chapter on "Economics of Transportation" it will also be interesting to see how the average net profit works out on the basis of average statistical cost of working.

For our example let us take Rudauli, a station on the Oudh and Rohilkhand Railway, 100 miles from Cawnpore and 154 from Moghal-serai.

If the traffic in grain goes to Calcutta the Oudh and Rohilkhand Railway propotion of the through rate would be Re. 0-3-1 per maund for 151 miles and 0-3-0 per maund if the traffic goes to Cawnpore *en route* to Bombay, for a lead of 100 miles over the Oudh and Rohilkhand Railway. It may also be assumed that the traffic in both cases will be in wagon loads although the rates are alike to small and large lots (the rates to Calcutta formerly used to be cheaper for large than for small lots but they are now the same).

The freight on one ton of grain from Rudauli to Moghalserai would be (27·22 mds. × Re. 0-2-9)=Rs. 4-10-10 and to Cawnpore (27·22 - mds. × Re. 0-3-0)=Rs. 5-1-8.

At the average cost of haulage of the Oudh and Rohilkhand Railway at say 2·6 pies per ton per mile the total cost would be—

	Rs.	A.	P.
to Moghalsari	2	1	4
to Cawnpore	1	5	8

Thus the profit to the Oudh and Rohilkhand Railway would be—

(1) In the case of Moghalserai		4 10 10
	Less	2 1 4
		2 9 6
(2) In the case of Cawnpore		5 1 8
	Less	1 5 8
		3 12 0

Taking the load at 10 *tons* per wagon the profit would be—

	Per wagon. Rs. A. P.
for Moghalserai	25 15 0
for Cawnpore	37 8 0

On these figures it would appear that it would pay the Oudh and Rohilkhand Railway better to send Rudauli traffic to Bombay than to Calcutta.

Assuming that Oudh and Rohilkhand Railway wagons are used in both cases the wagons would be away from the Oudh and Rohilkhand Railway longer in the case of Bombay than in the case of Calcutta traffic for the distance from Moghalserai junction to Calcutta is 419 miles against 810 from Cawnpore to Bombay. Although the wagon would be earning hire while away from the Oudh and Rohilkhand Railway the amount of hire is but Rs. 2-1-0, whereas if the wagon is on the Oudh and Rohilkhand Railway it would be earning Rs. 4 more, so that on the whole it is to the advantage of the Oudh and Rohilkhand Railway to send the traffic to Calcutta in preference to Bombay. The apparent gain of Rs. 12-0-0 per wagon in the case of despatches to Bombay will be more than counterbalanced by the loss of at least Rs. 2-0-0 per wagon per day for the longer period the wagon is away on the Great Indian Peninsula Railway than on the East Indian Railway. It will be away on the Great Indian Peninsula Railway for at least double the number of days, if not more, as compared with the number of days the wagon will take in returning to the parent line when sent to Calcutta, *viâ* Moghalserai.

Further, in the case of traffic to Calcutta, if Oudh and Rohilkhand Railway wagon is used it may come back loaded with coal and thus give freight to and from Moghalserai to the Oudh and Rohilkhand Railway, or the Oudh and Rohilkhand Railway may be able to back load from Rudauli an empty East Indian Railway wagon returning to the parent line after discharging its load of coal.

NOTE.—Attention is also invited to Appendix IV in Part III of this monograph. The necessity for this appendix is that the present position of transportation of goods on Indian Railways requires examination having regard to the latest results.

PART II

CHAPTER IX.

WHEAT.

World's production of wheat.

Indian wheat represents ordinarily nearly 10 per cent. of world's production of wheat.

Taking the years 1911-12 and 1912-13, yield of wheat (in tons) in the principal foreign countries was as follows :—

—	1911-12.	1912-13.
	Tons	Tons.
United States	19,520,000	20,405,000
Russia (European)	16,673,000	22,394,000
Russia (Asiatic)	2,574,000	3,064,000
France	8,937,000	8,536,000
Argentine	4,442,000	5,009,000
Italy	4,430,000	5,741,000
Canada	5,992,000	6,194,000
Hungary	4,935,000	4,497,000
Spain	2,936,000	3,005,000
Australia	1,915,000	2,459,000
Germany	4,283,000	4,573,000
Bulgaria	1,196,000	1,621,000
Austria	1,861,000	1,594,000
Great Britain and Ireland	1,534,000	1,515,000
Roumania	2,390,000	2,250,000
Algeria	726,000	985,000
Egypt	826,000	1,027,000
Japan	687,000	674,000
Chili	601,000	630,000
Tunis	103,000	218,000
Belgium	410,000	395,000
New Zealand	211,000	137,000
Denmark	135,000	179,000
Switzerland	85,000	95,000

against the productions in India during the same periods being :—

1911-12.	1912-13.
Tons.	Tons.
9,924,500	9,853,000

So India ranks third in the list of countries producing wheat.

India's Provincial production.

The quantities of wheat produced in the various provinces of India during 1911-12, 1912-13 were as given in the table appended below :—

----	1911-12.	1912-13.
	Tons.	Tons.
Punjab (including Native States) . . .	3,809,000	2,989,000
United Provinces	3,032,000	2,938,000
Central Provinces and Berar (including Native States).	904,000	1,062,000
Central India States	686,000	1,049,000
Bombay (including Native States) . . .	265,000	543,000
Bihar and Orissa	557,000	529,000
North West Frontier Province	280,000	195,000
Hyderabad State	43,000	48,000
Rajputana States	201,000	244,000
Sind (including Native States)	97,000	204,000
Bengal	47,000	51,000
Mysore State	500	1,000

The total quantity of wheat imported into the chief ports, *viz.*, Calcutta, Bombay and Karachi, by rail and river was as follows :—

Calcutta—1912-13.

	Cwts.
Bengal	93,316
Bihar and Orissa	952,503
United Provinces	5,313,186
Punjab	4,691
Sindh	102
Central India and Rajputana	34,163
Bombay	31
Central Provinces and Berar	248,976
Other places	551
TOTAL .	6,647,519

or 332 376 tons, against exports by sea from Calcutta during 1912-13 of 139,947 tons.

Bombay—1912-13.

	Cwts.
Bengal	13
Bihar and Orissa	201
United Provinces	1,855,444
Punjab	212,429
Rajputana and Central India	1,745,388
Bombay	123,157
Central Provinces and Berar	2,664,274
Other places	8,634
TOTAL	6,609,540

or 330,477 tons, against exports by sea from Bombay during 1912-13 of 198,854 tons.

Karachi—1912-13.

	Cwts.
United Provinces of Agra and Oudh	7,506,917
Punjab	20,949,329
Sindh and British Baluchistan	97,014
Rajputana and Central India	13,915
Other places	2,606
TOTAL	28,569,781

or 1,428,489 tons, against exports of wheat by sea from Karachi of 1,321,378 tons during 1912-13.

There are several interesting features in the foregoing figures.

In the first place, it will be seen that while Calcutta received 332,376 tons it exported only 139,917 tons, thus there was a balance of 192,429 tons, so that by far the largest quantity of wheat was retained in Calcutta for local consumption. The flour mills in Calcutta must have consumed a good quantity, but even then their productions of flour must have also been for local distribution in the province because the total quantities of wheat flour exported from Calcutta by sea during 1912-13 was but 4,851 tons. This proves that so far as the wheat trade is concerned the arrivals into Calcutta are more for the local market than for export.

The United Provinces, during 1912-13, produced 2,938,000 tons of which—

	Tons.
Calcutta took	265,659
Bombay took	92,772
Karachi took	375,346

Although by far the largest supply of wheat into Calcutta was from the United Provinces yet the port of Karachi drew 110,000 tons more from this Province than the Calcutta port, the takings of Bombay being comparatively small.

The surplus of Bihar and Orissa and Bengal was all sent to Calcutta, but from the Central Provinces (which produced 1,062,000 tons in 1912-13), Calcutta took but 248,976 cwts. (or 12,449 tons), the despatches to Bombay amounting to 2,664,274 cwts. (or 133,215 tons).

Besides United Provinces, other important sources of supply for the Bombay port are Rajputana and Central India, which sometimes sends more than the Central Provinces and Berar. A small portion of the Punjab wheat is also drawn by Bombay.

The Karachi port is fed mainly by the Punjab districts and partly by Sindh and the North-West Frontier Province.

It has already been observed that out of the total quantity of wheat received in Calcutta more is retained for local consumption than is exported and that its flour mills mill principally for the local market.

But while Karachi receives an enormous quantity it exports practically the whole of it, only 10,711 tons were for the local market out of 1,428,489 tons.

Bombay received 330,447 tons and exported 198,854 tons, so that there was a balance of 131,693 tons for the Bombay local market.

Alike Calcutta, both Karachi and Bombay have flour mills, and of the quantities that were not exported out of the total arrivals at these ports a portion must have been used in the mills. Moreover, there were fairly large exports of flour from these two ports during 1912-13.

From	Tons.
Bombay	31,050
Karachi	32,281

as compared with only 4,851 tons of flour exported from Calcutta.

The advantages of the Indian wheat for the British market are described to be as follows in Professor N. G. Mukerji's Handbook of Agriculture—

1. The yield of flour as compared with Australian and Russian wheat are as follows :—

Indian wheat gives	75 to 77	per cent.	of flour.
English wheat gives	69	„	„
Australian wheat gives . . .	72	„	„
Russian (Saxonska) wheat gives . .	72	„	„

2. Indian wheat is remarkably free from excess of moisture and is, therefore, better adopted for mixing with English wheats, which are too moist. Canadian wheat and U. S. A. wheat are however better kinds.
3. While the soft white wheat of India generally fetched better price in England than the hard white, the latter was in the past in demand in Southern Europe for macaroni making industry.

Refraction.

For a long time the complaint was that Indian wheat was mixed with dirt. For many years wheat exported from Calcutta was subject to a refraction of 5 per cent., and Bombay wheat to 4 per cent., and it was asserted that this refraction was largely responsible for cultivators or middlemen being induced to mix earth or other foreign matter. The question was discussed both in England and in India from time to time, and since the refraction has been reduced to 2 per cent., (*a*) the complaints of impurities have almost disappeared although certain amount of other food grains are found mixed with wheat.

The following extract from the Government of India Resolution No. 8758-8765-56 (Commerce and Industry Department), of 29th November 1906, which was published in the Government of India Gazette for the information of the public will prove interesting as it bears on this question of refraction.

"The Government of India were then disposed to think that the rigid adherence of English buyers to the system of purchase on a fixed basis of refraction was to a great extent responsible for the systematic adulteration as opposed to the addition of impurities owing to the system of cultivation and the methods of preparation for the market of wheat before it left India; and they therefore suggested that considerable improvement might be affected if Home dealers were authoritatively informed that there would be no difficulty in supplying clean wheat on a basis of two per cent. refraction, which would cover the maximum amount of impurities due to natural causes and would preclude deliberate adulteration. The replies received from the Chambers of Commerce were, however, not sufficiently explicit on this point, and it was necessary again to consult them and the local millers in regard to this matter. It appeared to the Government of India that, if the existing system under which the grain is sold was altered, no action on their part would be necessary, and they therefore again proposed, with the object of strengthening the position of a certain section of English buyers who were known to be in favour of procuring cleaner wheat, to state authoritatively that wheat could be regularly supplied from India containing not more than 2 per cent. of impurities. The point specifically referred for opinion was whether this announcement could safely be made."

Purchase system of wheat in the Punjab.

The system, under which wheat is purchased from the agriculturist and sold to the shippers through the *banias* and *mahajans* is fully described in the Report of the Committee, appointed by the Railway Board, to report on certain questions concerning the grain traffic to Karachi from the territory, served by the North Western Railway, issued in 1910:—

"Up to recent years the cultivators, speaking generally, were poor, but latterly they have become much better off. This improvement in their position has been brought about by two reasons:—

(*i*) The increasing purchases made by exporter of wheat.

(*ii*) The substantial rise in prices which they have been able to obtain for the wheat.

NOTE (*a*). The limit of 2 per cent. is limited to food grains other than wheat, but no allowance is made for dust or other impurities.

"The wheat crop is ready for harvesting about the end of April and is immediately made ready for the market.

"The small cultivator at once brings the whole of his crop to the market for sale except a small portion which he keeps for his food.

"The moderate cultivator brings to market much the larger part of his crop but as his position financially is better than that of the small cultivators, he in practice keeps a part of the crop back for sale at a later period of the year.

"The large cultivator will, as a rule, only market about one-half of his crop, as he looks to obtain higher prices later in the year should the rains not be satisfactory or should there be shortage of food at some part of India which will increase the demand in his locality.

"The reasons for bringing the respective portions of the crop to market, as above mentioned, by the small, moderate and large cultivator are common to all, *viz.*, the obligation to pay their water or revenue taxes or both, and in a great many cases, to discharge their indebtedness to the money lender who has helped them with advances to pay the expenses of cultivation and gathering their crops.

"The Committee are of opinion that sufficient means of storage do not exist to enable cultivators to hold up the whole of their crop to secure higher prices on the chance of an extraordinary demand for wheat, but even if such storage did exist in however satisfactory a form the financial reasons just stated would preclude this being practicable, as the cultivator is forced to market a very large portion of his crop immediately it is gathered.

"The exporting firms do not deal direct with the cultivator but make all their purchases through an agent who in turn buys partly from the cultivator, and partly from the "*bania*," or what is known locally as the grain merchant. As above stated the exporters' agents buy from the wheat stacked in the *mundis* at the time the new crop comes to market, but they also buy wheat for forward delivery; these transactions take place at different times during several months before the crop is ready. In such cases the exporter takes delivery of the wheat when deliverable at the railway station and in some cases in the godowns where he has godowns of his own at certain important centres.

"The purchases of the exporter are entirely governed by the demand which arises for the wheat in western Europe but principally in England, and this demand is in turn governed by the supply of wheat grown in England or other countries, such as Russia, United States of America, Canada, Argentine and Australia, all these crops come into the market at a different time to the Indian crop, the result being that in consequence of the small quantity of grain in England the importer there must have wheat to sell to the millers who, in the absence of other available wheat, are willing to pay a good price for the Indian wheat. The period when there is least wheat available in Europe is during the months of June, July and August and therefore the prices then rule high, so that the importer instructs his agents in India, who are the exporters, to buy certain quantities of wheat at certain prices and it is this state of affairs that makes the exporter in India so anxious to obtain his wheat in time to ship it during the months of May, June and July, in fact he obtains a somewhat higher price for the May shipment than he does for the June shipment and again the June price is slightly higher than July ; after that prices become more even. It was stated to the Committee that, as the exporter can afford to pay higher prices for the above three months' shipment, he can in turn afford and does pay a higher price to the owner upcountry in India for deliveries in these months."

It was remarked not many years ago that the demand for wheat as people's food will go on increasing and that no country need therefore fear of over production so long as there are transport facilities at a reasonable price.

Hitherto the principal taker of India's wheat has been the United Kingdom.

Position of Indian wheat in the United Kingdom.

The imports of wheat into the United Kingdom from all countries, per year, calculated on the average of the five years 1910 to 1914 were as follows :—

	Tons
United States of America	1,121,502
Canada	1,506,190
Russia	682,986
Germany	18,906
Roumania	39,706
Turkey	9,224
Argentine Republic	609,181
Chili	22,178
Australia	611,768
New Zealand	17,107

whereas the imports from India into the United Kingdom on the same basis come to 929,326 tons per year, or India comes next to America and Canada.

The percentage of imports of wheat into the United Kingdom from the various countries was as follows :—

—	1910.	1911.	1912.	1913.	1914.
United States of America	10·4	13·2	18·2	32·2	32·9
Russia	27·5	18·5	8·2	4·7	7·0
Canada	15·6	14·7	19·7	20·6	30·3
India	17·0	20·6	23·2	17·7	10·3
Australia	12·5	14·2	10·9	9·6	11·7
Argentine	14·4	15·0	17·1	13·9	6·3
Other countries	2·6	3·8	2·7	1·3	1·5

In addition to getting wheat from foreign countries the United Kingdom also receives flour from all countries, the larger takings hitherto being from America, Canada, France, Germany and Australia. The despatches of flour from India to England for all practical purposes may be called "*nil.*"

The imports of wheat flour into the United Kingdom were as follows during 1913 :—

	Tons.
Russia	119
Germany	22,790
Netherlands	2,120
Belgium	1,605
France	15,085
Italy	5,125
Austria Hungary	4,985
Roumania	2,430
United States of America	307,882
Argentine Republic	9,565
Other foreign countries	1,220
British India	75
Australia	17,454
Canada	208,428
Other British possessions	25

After the war it will remain to be seen whether India will be in a position to capture some of the wheat and wheat flour trade that will be lost to the enemy countries.

In connection with the supply of wheat in the British market the following extract from the 'Memorandum on wheat for the British market by Sir James Wilson' state fully the difference in the qualities and trade conditions of the productions of various countries :

"As regards all Indian wheat the quarter means a net weight of 492 lbs. So that when the quoted price is 40*s.* per quarter, this means that the buyer pays only 39*s.* for 480 lbs. The quotations are c.i.f. ; that is, the seller pays the cost of insurance and freight, and the buyer gets the wheat delivered over the ship's side at the price stated. The bags are given free, and as the buyer can get about 8*d.* a quarter for them, that means that he pays for the wheat itself 8*d.* less per quarter than the price agreed on. The buyer gets off 2 per cent. discount and interest for 60 days at 5 per cent., or in all $2\frac{5}{6}$ per cent. so that if he pays cash, he pays 1*s.* 1*d.* per quarter less than the price agreed on (taking that price as 40*s.*). On the other hand, under the conditions of the Indian wheat contract, the buyer pays at the wheat price for 2 per cent. of barley gram and other feeding grains, and, of course, generally gets at least that proportion. If we assume that those grains are worth to the buyer half the price of wheat, this means that he loses 1 per cent., or, in other words, he would pay 1 per cent. more than the price agreed on, if he were sure of getting nothing but pure wheat. That is, he considers the wheat itself worth 5*d.* more per quarter than he pays for the mixture. Making all these allowances, it appears that when the price quoted for Indian wheat is 40*s.* per quarter, the buyers really pay only 37*s.* 8*d.* for 480 lbs. of pure wheat.

" British wheat is paid for in cash at 504 lbs. to the quarter, free on rail, so that, without making any allowance for the varying railway freight, when it is quoted at 37*s.* a quarter, the buyer pays only 35*s.* 3*d.* for 480 lbs.

" In the case of Russian wheat, two per cent. discount is allowed, *plus* interest at five per cent. for about 75 days, and the buyer gets a mixture containing about four per cent. foreign matter, practically all cockle. The quarter is 492 lbs., so that, after making all allowances, when Russian wheat is quoted at 39*s.* 6*d.* per quarter, the buyer really pays 38*s.* 10*d.* for every 480 lbs. of pure wheat he gets.

" Argentine wheat is paid for by the gross weight at 480 lbs. to the quarter, and is generally imported in bulk. Interest is allowed for 90 days from date of arrival of the bill of lading at a half per cent. over short deposit rate, say, three per cent. The buyer expects to get about six per cent. of oats and other foreign matter, so that he really values the wheat at higher than the quoted price. It thus appears that when the buyer pays a nominal price of 37*s.* 6*d.* a quarter for Argentine wheat, he really values the pure wheat at 38*s.* 2*d.* for 480 lbs.

" The eastern ports of the United States now practically export only flour. White Walla wheat from California is bought at 500 lbs. to the quarter gross weight. Interest is allowed for 60 days at about three per cent. After making all allowances for interest, tare, and value of bags, when the quotation is 40*s.* per quarter, the buyer actually pays about 38*s.* for 480 lbs. of wheat.

" Australian wheat is bought at 480 lbs. to the quarter, and similar allowances have to be made in this case also; so that when it is quoted at 39*s.*, the buyer pays 38*s.* 7*d.* for 480 lbs. The wheat is practically pure.

" Canadian wheat is imported in bulk, and is practically pure and carefully graded. The quarter is 480 lbs., and the only allowance to be made is that for interest, so that when No. 2 northern Manitoba is quoted at 40*s.*, the buyer actually pays 39*s.* 10*d.* for 480 lbs. It appears that Canadian wheat is the most valuable wheat imported in any quantity. This is partly owing to its own quality, but partly also to its being carefully graded and transported in bulk, so that it is pure and uniform in character.

" About three-fourths of the wheat imported into the United Kingdom from India come from Krachi, and all the wheat that comes from Karachi is classed in the Londen market as soft wheat. Of the imports from Karachi about 55 per cent. consist of what is known as choice white Karachi, a soft white wheat; 10 per cent. of choice white Delhi, a more even-running soft white wheat; and 35 per cent. of red Karachi, a soft red wheat with some rather hard grains. Thus nearly half of all the wheat imported from India is the choice white Karachi, which is very mixed in character, but mainly consists of soft white grain, with some admixture of red or hard grains, *the fewer the better.* Although wheat in the Punjab is often grown from mixed seed, there are many fields which produce wheat much more uniform in type than the cargoes which reach England, and what probably happens is that when a Punjab or Karachi merchant buys wheat for export to England, if the lot is large enough to make it worth while to handle it separately, and consists of even-running soft white plump grains, with few red or hard grains, he ships it as choice white Delhi (very little wheat grown near Delhi really comes through Karachi) and expects to get 6*d.* or 9*d.* per quarter extra for it. If the lot, while still consisting chiefly of soft white grains, is not even, and contains some red or hard grains, he ships it as choice white Karachi, the standard class for export. If it contains too many red or hard grains to be so classed, he mixes it with red Karachi, the inferior class, which commands a price of 6*d.* or 8*d.* per quarter below that of choice white Karachi. He will not, if he can avoid it, buy for export to England any really hard wheat (that is, flinty or horny, as distinguished from dry or translucent) whether white or red.

"Choice white Bombay, No. 1 club Bombay and No. 2 club Calcutta, which command a price in the London market from 1*s.* 6*d* to 9*d.* a quarter above choice white Karachi, are all soft white wheats ; and hard red Bombay, which is practically the only really hard wheat imported from India, is priced lowest of all, about 1*s.* 3*d.*, below choice white Karachi.

"Broadly speaking then the softer and whiter a parcel of wheat is, the better price does it command in the London market ; and the more it consists of red and especially of horny and flinty grains, the lower is the price it will fetch. Other qualities which tend to raise the price are the size, boldness, plumpness, uniformity, and healthy appearance of the grains composing the sample.

"When one compares the net prices actually paid in the London market for 480 lbs. of wheat received from different countries, it appears that the best Indian wheats fetch a price about a shilling a quarter of 480 lbs. below the prices of good Canadian wheat, and that choice white Karachi, which forms the bulk of the imports from India, is worth about 2*s.* a quarter below Canadian, and about 1*s.* a quarter below Australian wheat. When one sees the beautifully clean uniform wheats received from those countries, as compared with the mixed wheats received from India, the wonder is that the difference in price is not greater. Indian wheat commands in the London market a price about 2*s.* 6*d.* per quarter of 480 lbs. higher than average British wheat, its superiority over the home-grown grain being chiefly due to its greater dryness. On the whole, Indian wheat is of a quality which meets the requirements of the British miller, and if we could only supply him with uniform cargoes of the best qualities of wheat now grown in India, they would command as good a price as almost any in the market."

The above remarks were made in 1910, and Mr. Dutt in his report of 1915 on the Rise in Prices in India states as follows :--

"India is able to spare 10 to 15 per cent. of its total production of wheat for other countries, unless unfavourable agricultural conditions reduce the supply to an abnormally low level, when not only do exports to foreign countries shrink to very small dimensions but the supply also becomes insufficient to meet the internal demand, and consumers of wheat have to take recourse to rice and other kinds of food grains. Foreign wheat can hardly ever compete with the other grains of India, and is, therefore, seldom imported to any substantial extent.

"The foreign demand for Indian wheat is essentially different from that for Indian rice. Indian wheat is ordinarily inferior to the wheat grown in Russia, the United States, Argentine and the other great wheat exporting countries of the world. It does not actually compete with the wheat of these countries but is required outside India only to supplement deficiencies. Apart, therefore, from internal conditions affecting the supply, the exports are subject to violent fluctuations arising out of variations in the supply in other countries. In one year, the demand will be very large and, even if the Indian harvest is abundant, prices will rise; in the following year, the foreign demand may be largely reduced owing to abundant supplies from Russia, the United States and other exporting countries and, even if the harvest in India be deficient, prices might fall. The European demand, therefore, exercises a very important influence on the price of Indian wheat.

"The following statement shows the productions, export and available supply of wheat in British India."

(*In thousands of maunds.*)

Years.	Total production.	Exports.	Net available supply including wastage and requirements for seeds.
1	2	3	4
1908	14,65,45	35,17	14,20,98
1909	18,91,60	3,02,68	15,88,92
1910	23,09,83	3,64,17	19,45,66
1911	23,60,77	3,94,28	19,66,49

The world's outturn of wheat in millions of bushels was :—

—	United States of America.	Russia.	France.	India.	Austria-Hungary.	Italy.	Germany.	Spain.	Canada.	Argentine.	Other countries.	GRAND TOTAL.
Average for 5 years 1905 to 1909 . .	693	531	342	279	220	171	137	120	122	158	566	3,339
1910 . .	695	699	268	324	255	153	142	137	150	131	697	3,651
1911 . .	621	447	315	343	252	192	149	148	216	146	688	3,517

The price of wheat in India and in certain foreign countries was as follows in 1912 aud 1913, March to May—

Date.	INDIA		CANADA	UNITED STATES.	ARGENTINE	RUSSIA.	UNITED KINGDOM		
	Bombay	*Karachi*	*Winnipeg*	*Chicago*	*Buenos Aires.*	*Odessa*	*Liverpool*	*London.*	
	Delhi No 1 White pessy per 492 lbs	White per 492 lbs.	No. 2 Northern per 480 lbs.	No 2 Hard Winter per 480 lbs.	Barletta per 480 lbs	Winter wheat per 480 lbs	No 2 N Manitoba per 480 lbs	English white per 504 lbs.	Choice white Karachi per 492 lbs.
	s d.	s d.	s d	s. d.	s d	s. d	s d	s d	s d
1912—									
March . .	30 10	31 6	..	33 6	32 8	.	..	37 3	
April . .	33 9	32 6	34 1	35 4	..	36 11	..	41 2	
May .	31 8	31 6	33 0	39 3	31 10	36 6	..	40 8	.
1913—									
March . .	32 8	33 0	27 5	29 5	..	36 4	36 8	36 2	..
April . .	33 4	32 0	29 3	30 7	..	34 6	37 10	37 2	..
May . .	32 11	30 6	29 7	29 8	31 6	34 1	37 1	37 8	..

The reasons for taking 492 lbs. to a quarter for Indian wheat have already been explained in Sir James Wilson's Memorandum, extract from which bearing on this point has already been given.

The following table gives a comparison of the difference in prices of Indian wheat between those charged in the Punjab and those paid in England.

Calendar year.	Rupees per maund.	Shillings per quarter.	Average price in England and Wales of Indian Wheat. Shillings per quarter.	Difference between Punjab and English price. Shillings per quarter.
1901	2·65	21·2	29·8	8·6
1902	2·52	20·2	31·1	10·9
1903	2·45	19·6	29·8	10·2
1904	2·26	18·1	31·3	13·2
1905	2·67	21·4	32·7	11·3
1906	2·73	21·8	31·2	9·4
1907	2·90	23·2	33·6	10·4
1908	4·19	33·5	35·0	1·5
1909	3·67	29·4	39·7	10·3

It was remarked in 1910 that so long as there was a difference of 10*s.* per quarter between the Punjab and the English prices the Punjab wheat could have a good chance in the London market as will be seen from the following remarks of Sir James Wilson.

"The Railway freight of wheat from Amritsar, one of the principal Punjab markets, to Karachi, a distance of 816 miles, is 10½ annas per maund, or 5*s.* 3*d.* per quarter, and the freight by sea from Karachi to London is now about 16*s.* per ton of 18 cwt., or 3*s.* 10*d.* per quarter, so that the total cost of carriage would be 9*s.* 1*d* per quarter, and, allowing for insurance, profit, etc., it would seem that it should pay to export wheat from the Punjab to London, whenever it can be bought in the Punjab, at, say, 11*s.* per quarter below the London price."

The average wholesale prices of wheat in India at the three ports and some of the important centres were as follows before the war :—

—	Per maund of 82 lbs.						
	Calcutta	Bombay	Karachi	Jubbulpur	Meerut.	Cawnpore	Lahore
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January . . .	3 9 6	4 0 3	3 14 2	3 10 3	3 3 2	3 5 11	3 9 11
February . .	3 12 6	4 2 9	4 1 9	3 10 3	3 9 0	3 12 0	4 1 5
March . . .	3 15 6	4 1 9	4 1 9	4 0 0	3 10 3	3 12 0	3 13 0
April . . .	3 15 0	4 2 0	3 15 3	3 7 6	3 9 0	3 8 0	3 11 2
May . . .	3 10 6	4 2 0	3 13 11	3 5 9	3 5 4	3 5 5	3 6 7

The ruling prices at the ports combined with the railway freights generally decide the flow of traffic. Taking the month of March and with the price ruling at Cawnpore at Rs. 3-12-0, it was not possible for either Calcutta or Bombay to do any business except such business which had already been transacted and contracted for under the forward sale system. The prices quoted at these ports were Rs. 3-15-0 and Rs. 4-2-0, whereas with the railway freight of Re. 0-5-3 to Calcutta and Re. 0-7-0 to Bombay, the total cost of the Cawnpore production would be Rs. 4-1-3 at Calcutta and Rs. 4-3-0 at Bombay. Such prices cannot hold on and the price came down in April to Rs. 3-8-0 at Cawnpore and with Calcutta price at Rs. 3-15-0 and the Bombay price at Rs. 4-2-0, the latter port would command the traffic as the margin of profit would be greater in the case of Bombay buyers even with higher Railway freight to that port thus :—

	Rs.	A.	P.
Cost at Cawnpore	3	8	0
Railway freight to Bombay	0	7	0
TOTAL	3	15	0
Bombay quotation	4	2	0
Margin of difference	0	3	0
Cost at Cawnpore	3	8	0
Railway freight to Calcutta	0	5	3
TOTAL	3	13	3
Price in Calcutta	3	15	0
Margin of difference	0	1	9

The average price per maund of wheat in Calcutta, Bombay and Karachi for the years 1908, 1909, 1910, 1911 and 1912 are given :—

Year.	Calcutta.	Bombay.	Karachi.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
1908	5 9 7	6 1 3	5 0 1
1909	4 15 0	5 13 0	4 12 9
1910	3 15 3	5 14 1	4 2 3
1911	3 14 7	5 1 10	4 0 4
1912	4 1 4	5 13 5	4 6 11

The Bombay prices were generally the highest, Karachi came next high during 1910 to 1912.

Karachi commands a large wheat area and from most districts in the Punjab (except from places close to Bhatinda, Kot Kapura, Rewari and Delhi where Bombay can compete), the railway freights to Karachi being much lower because of shorter distances, it draws the traffic in competition with Bombay, even though the Bombay prices may rule high.

The sea freights for wheat from 1908 to 1912 to the United Kingdom from the three ports were as follows :—

Steamer freight on wheat to England per ton.

—	1908.	1909.	1910.	1911.	1912.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Calcutta—					
London . . .	0 13 3	0 17 11	1 0 1	1 2 6	1 10 0
Liverpool . . .	0 13 3	0 18 4	1 0 6	1 2 6	1 10 0
Bombay—					
London . .	0 9 6	0 12 1	0 13 0	0 15 6	1 3 0
Liverpool . .	0 8 2	0 12 4	0 15 0	0 16 6	1 5 0
Karachi—					
Liverpool . . .	0 9 0	0 11 0	0 15 0	0 15 11	1 0 6

The difference between the freights to London during the following years from Calcutta and Bombay were as follows :

	£ s. d.
1908	0 3 9
1909	0 5 10
1910	0 7 1
1911	0 7 1
1912	0 7 0

Taking the average difference at £0-7-0 or 84*d*. per ton (*i.e.*, As. 84 ÷ 27 per maund) between the Calcutta and the Bombay steamer freights, the difference per maund comes to $3\frac{1}{9}$ annas, and thus Bombay was able to offer a better price than Calcutta. The steamer freight from Karachi does not compare unfavourably with Bombay according to the figures given in the statement above. It is also significant to note that in 1908 the steamer freight from Calcutta was at its lowest figure taking the freights from that port for the years 1908 to 1912, and during that year Calcutta offered the best price for wheat taking the prices ruling at that port from 1908 to 1912.

Elevators.

The question of providing elevators for wheat in the Punjab was examined by a committee appointed by the Railway Board in 1909, and it was decided that if the Local Government provided elevators at places in the Punjab the railway would afford facilities in the way of providing siding accommodation to the elevators and also supply certain number of wagons fitted to carry grain in bulk. Elevators would assist the ryots in storing grain in order to encourage ryots or the merchants in India (who can afford to buy and store wheat) to keep the grain in elevators awaiting a rise in the market, although it was held that the ryots generally must dispose of the grain soon after it was harvested. The prices of wheat in winter in England being higher it was held that the traffic could be held back in India to the advantage of the Indian ryots, zemindars or *banias*, whoever can hold the grain till then, and that instead of all the traffic being rushed through in 3 or 4 months it would be distributed throughout the year.*

Indian Railways' traffic in wheat.

The traffic carried by the following railways in wheat and wheat flour was as follows during 1910 to 1913-14 :—

——	Wheat.	Wheat flour.
	Tons.	Tons.
NORTH WESTERN RAILWAY.		
1910	1,146,061	73,486
1911	1,290,804	82,782
1912	1,704,409	88,756
1913	1,344,357	98,495
OUDH AND ROHILKHAND RAILWAY.		
1910	230,468	18,706
1911	246,721	21,062
1912	302,098	21,229
1913-14	216,776	21,115
GREAT INDIAN PENINSULA RAILWAY.		
1910	184,138	19,909
1911	321,395	20,263
1912	404,437	24,912
1913-14	500,709	25,164
EAST INDIAN RAILWAY.		
1910	349,030	40,009
1911	402,943	40,349
1912	474,068	43,030
1913-14	321,154	47,326

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* Wheat elevator is nearly ready or already working at Lyallpur.

—	Wheat.	Wheat flour.
BENGAL NAGPUR RAILWAY.	Tons.	Tons.
1910	83,707	6,851
1911	122,155	6,617
1912	90,936	7,184
1913-14	80,029	9,532
BOMBAY, BARODA AND CENTRAL INDIA (BROAD GAUGE).		
1910	118,153	8,050
1911	117,936	9,970
1912	153,068	12,914
1913-14	131,337	10,841
BOMBAY, BARODA AND CENTRAL INDIA (METRE GAUGE).		
1910	183,188	10,589
1911	248,705	13,191
1912	261,119	16,377
1913-14	215,306	16,527
BENGAL AND NORTH-WESTERN RAILWAY.		
1910	92,196	4,434
1911	106,666	5,235
1912	118,502	4,583
1913-14	94,229	9,226
ROHILKUND AND KUMAON RAILWAY.		
1910	64,531	2,187
1911	64,123	2,427
1912	82,218	2,159
1913-14	65,715	3,612
JODHPUR-BIKANER RAILWAY.		
1910	81,792	2,614
1911	168,615	3,069
1912	172,031	2,926
1913-14	166,910	3,193

To analyse these figures detailed statistics of station to station traffic for 1911 for important railways have been examined and they are commented upon in the following paragraphs.

Dealing first with the North Western Railway, it is found that the total wheat traffic of this Railway in 1911 was 1,290,804 tons or 35,135,685 maunds, of which bookings to Karachi alone amounted to 30,578,676 maunds giving the North Western Railway an earning of Rs. 1,51,05,724 on Karachi traffic which works out to Re. 0-7-11 per maund, and taking the export rates to Karachi that were in force at the time (1911) this rate was charged for distances of 601 miles so that the North-Western Railway got a very good average rate and lead on export wheat traffic.

North-Western Railway wheat traffic and rates.

The traffic in wheat from the North Western Railway to Bombay and Calcutta was as follows :—

To—	Maunds.
Calcutta	23,763
Bombay	216,019

The highest lead on traffic to Bombay *viâ* Delhi (the despatches *viâ* the junction being most to Bombay) was 195 miles, and 65 miles *viâ* Ghaziabad, and 89 miles *viâ* Bhatinda, whereas great bulk of the traffic to Calcutta was made over by the North Western Railway at Meerut and some *viâ* Ghaziabad, and on *viâ* Meerut traffic the North Western Railway lead was less than 20 miles.

The North Western Railway scale rate for grain (Col. II. rate) is as follows :—

Telescopic scale.

	Pie per maund per mile.
For first 150 miles	¼
For extra distances over 150 but not exceeding 300 miles	⅕
For extra distances above 300 miles but not exceeding 450 miles	⅙
For extra distances above 450 miles	⅛

plus a terminal of 3 pies per maund.

These rates apply generally, except that lump sum rates lower than this scale are in operation for export traffic to Karachi for distances of more than 300 miles.

Therefore the North Western Railway rates to rival ports are not "block rates," because the North Western Railway rate starts with ¼ pie per maund per mile, whereas the Bengal Nagpur, East Indian and Great Indian Peninsula Railways' rates on grain to rival ports start at ⅙ pie per maund per mile, and 8 to 9 pies terminals are charged.

The principal wheat despatching stations on the North Western Railway are as follows and the traffic forwarded from each of these stations or group of stations during 1911 are shown below :—

	Maunds.
Meerut	444,002
Muzaffarnagar	572,973
Saharanpur	397,153
Amballa City	419,336
Ludhiana	316,839
Phagwara	741,351
Jullundur City	670,800
Amritsar	83,700
Stations on Delhi-Lahore section	2,230,077
Gujarkhan	195,840
Multan City and Cantonment	347,710
Stations on the Lahore-Rohri section	2,170,335
Khanpur	57,988
Stations on the Rohri-Karachi section	333,125
Sukkur	1,040,362
Sangla Hill	961,428
Chiniot Road	837,212
Lyallpur	1,579,178
Gojra	1,889,461
Tobatek Singh	974,399
Sargodha	911,108

The distances and the old and new rates to Karachi are as shown below :—

—		Rate per maund at present.	Rate per maund in force previous to October 1916.
Miles from Karachi		Rs. A. P.	Rs. A. P.
948	Meerut City	0 9 9	0 8 1
933	Muzaffarnagar	0 10 0	0 7 10
897	Saharanpur	0 9 10	0 7 6
842	Amballa City	0 10 3	0 8 1
806	Ludhiana	0 10 10	0 9 8
816	Phagwara	0 11 1	0 10 0
802	Jullundur City	0 11 3	0 10 4
786	Amritsar	0 11 6	0 10 6
727	Ferozepore	0 10 3	0 9 0
755	Lahore	0 11 2	0 10 0

Miles from Karachi.		Rate per maund at present.			Rate per maund in force previous to October 1916.		
		Rs.	A.	P	Rs	A.	P.
864	Gujarkhan	0	12	3	0	11	6
575	Multan City	0	9	3	0	7	6
428	Khanpur	0	7	6	0	5	9
299	Sukkur	0	5	10	0	4	6
711	Sangla Hill	0	10	8	0	9	6
684	Lyallpur	0	10	5	0	9	3
653	Gojra	0	10	1	0	8	9
636	Tobatek Singh	0	9	10	0	8	8
721	Sargodha	0	10	10	0	9	9
282	Larkhana	0	3	9	0	3	9
731	Kasur	0	10	4	0	9	6

Except in the case of Gujarkhan the enhanced rates are not higher than Re. 0-11-6 per maund, and according to Sir James Wilson's calculations 10 to 11 annas were considered to be about the rate suitable from the Punjab to Karachi which would admit of movement of wheat to the London market taking the railway freight, steamer freight and the price in the Punjab and the London price into account. What rates will be suitable, after the war is over, is a question which is difficult of decision at the present moment. The total supplies of London from all wheat producing countries, the steamer freights from all such countries, and the prices at the place of production and in London, will decide the point. But the following factors might be borne in mind.

1. The rise in steamer freights will be all around and will not be confined to cargoes from India alone.
2. For a time, the supplies from the continent of Europe will be of a limited nature whereas supplies from India will be no less than what India has supplied in the past unless there is scanty rainfall or an unfavourable season in some other way.
3. India will, however, have to compete with supplies from the United States of America, Canada and Argentine Republic, and if the steamer freights from those places are lower, India will be at a disadvantage, but the general curtailment of supplies from Europe will give India a chance, at any rate for a few years after the war.

There will be a rise in the prices owing to restricted freight being vailable and the slight rise in the railway rates to the extent of Re. 0-1-3 to Rc. 0-2-4 per maund can not do much harm in the way of estricting the despatches from India, but a great deal will depend on he freight available for the carriage of produce from the different ountries which supply England.

It cannot be said that the railway rates on the North Western Railway are not lower for longer distances than for shorter distances. This may be said to be due to a certain extent : –

1. to rates at places like Delhi, Amballa, Amritsar, Meerut, Saharanpur, Muzaffarnagar, Ferozepore having to be low necessarily for longer distances than for stations in the interior owing to existence of competition with Bombay and Calcutta at the former places,
2. to so many junctions and parallel lines on the North Western Railway.

But on the East Indian Railway, the rates on parallel lines were adjusted on the basis of rates from corresponding stations on the main line and the East Indian Railway rates also rule the rates for Oudh and Rohilkhand Railway and the Bengal and North-Western Railway.

Now to refer again to the rates of the North Western Railway :—

The rates to Karachi are from—

	Rs.	A.	P.
Lahore for 755 miles	0	11	2
Jullundur for 802 miles	0	11	3
Ludhiana for 806 miles	0	10	10
Amritsar for 786 miles	0	11	6

which might have been a group rate of Re. 0-11-3, and this rate would have commanded the area around these centres except at places near Ferozepore and near Amballa.

According to Government of India list of mills and factories there are the following flour mills in the Panjab and Sind : –

Amballa City
Bhatinda
Lahore
Amritsar
Ferozepore
Sukkur
Sikarpur

besides the mills in Delhi and Karachi.

The railway traffic in wheat and flour to and from these places were as follows although each of the above places are wheat centres and a large quantity of wheat was available for purchase locally in addition to the quantity brought by rail :—

(Figures for 1911.)

Names of stations.	WHEAT					WHEAT FLOUR.				
	Quantity received.	Earnings	Average rate per maund.		Average lead in miles	Quantity despatched	Earnings.	Average rate per maund		Average lead in miles
	Maunds	Rs.	A	P		Maunds	Rs.	A.	P.	
Amballa Cantonment and City	190,455	22,217	1	10	71	295,839	46,271	2	6	108
Lahore	147,653	12,279	1	4	41	7,301	1,286	2	10	124
Amritsar . .	24,537	3,230	2	1	84	31,570	3,727	1	11	78
Ferozepore	34,077	4,217	2	0	84	6,899	790	1	10	70
Sukkur	31,725	4,462	2	3	92	21,218	3,687	2	9	119
Shikarpur . .	131,793	85,365	3	2	141	274,945	67,361	3	11	164
Delhi	40,339	3,452	1	4	40	27,149	2,217	1	4	40
Bhatinda . . .	135,506	23,052	2	9	120	61,906	13,486	8	6	155

The above statement discloses the following facts :—

1. The average lead on wheat received by rail by the mills was less than 150 miles and generally between 70 and 95 miles on which the rate charged was ¼th pie per maund per mile *plus* 3 pies terminal.
2. Similarly in the case of flour each mill did not command a large area, the highest average lead on flour traffic being 164 miles.
3. The wagons carrying wheat to the mills got back loads of flour.

Thus indicating that although the traffic to and from the mills is for short lengths, the traffic gives loads to wagon in both directions at paying rates and that if rates for long distances are reduced the railway earnings on present traffic cannot be affected, while long distance traffic will be encouraged.

EAST INDIAN RAILWAY WHEAT TRAFFIC.

The figures of wheat traffic to Bombay from the East Indian Railway have been given in chapter VII on Maxima and Minima rates and they are, therefore, not repeated here, and the terminals and rates on such traffic have also been discussed in the chapter on "undue preference and block rates."

The East Indian Railway traffic in wheat is principally to Calcutta, part of which is consigned to Khidderpore Docks and the remainder to Howrah. The traffic consigned to the Docks is for direct shipment, and of the traffic to Howrah a portion is also eventually shipped. The East Indian Railway goods sheds at Howrah provide accommodation for brokers, and buying and selling is done there and a portion of the produce brought to Howrah is sold to exporters and is repacked in double bags and sent on by boats across the river Hughli to the Docks for shipment.

Out of the total traffic in 1911 of 402,943 tons on the East Indian Railway the quantities of wheat received at Howrah and at the Khidderpore Docks were as follows during 1911 :--

	1st half 1911. Tons.	2nd halt 1911. Tons.	Total. Tons.
Howrah.	93,255	84,035	177,290
Khidderpore Docks . .	115,227	31,729	146,956
			324,246

East Indian Railway wheat traffic and rates.

The total earnings of the East Indian Railway wheat traffic in 1911 were Rs. 22,69,946, of which traffic from the Bengal and North-Western Railway and the Oudh and Rohilkhand Railway to Calcutta (Howrah and Docks) contributed no less than Rs. 14,01.293. The traffic *viâ* Mokameh Ghat and *viâ* Moghalserai was as follows :--

Viâ Mokameh ghat traffic.

East Indian Railway lead.	Tons.	Rs.	Average rate per maund. R. A. P.
284 miles.	64.137	3,38,947	0-3-1 - ·13 pie per maund per mile.

Viâ Moghalserai traffic.

Miles.	Tons	Rs.	Average rate per maund. R. A. P.
419	171,356	10,62,346	0-3-8 = ·105 pie per maund per mile.

It will be seen that the traffic *viâ* Mokamehghat did not give the East Indian Railway a higher rate than between $\frac{1}{7}$th and $\frac{1}{8}$th pie per maund per mile and the rate *viâ* Moghalserai averaged between $\frac{1}{10}$th and $\frac{1}{9}$th pie per maund per mile.

The enhancements that have been made in the East Indian Railway rates will tend to increase these figures to $\frac{1}{6}$th and $\frac{1}{8}$th pie per maund per mile respectively or slightly more. The rates from particular stations will be referred to when we come to the Oudh and Rohilkhand Railway and the Bengal and North-Western Railway rates.

The principal local stations on the East Indian Railway sending wheat to Calcutta were as follows and the old and new rates work out as under :—

Distances from Calcutta—

Miles.			Present rates. Rs A. P.		Old rates. Rs. A. P.
202	Rajmahal .	Loop line	0 3 5	(400 maunds)	0 2 9
219	Sahebganj .		0 3 7	,,	0 3 4
245	Colgong .		0 3 11	,,	0 3 4

Distances from Calcutta—

Miles.			Present rates				Old rates		
			Rs.	A.	P.		Rs.	A.	P.
296	Khagaria Gogri	River out agencies on the loop line	0	5	3	(400 maunds)	0	4	3
		viâ Monghyr	0	4	6	„			
332	Patna .		0	4	11	„	0	4	8
411	Buxar .	On chord line	0	5	9	„	0	5	3
356	Sasaram .	(On Grand chord)	0	5	2	„	0	5	2
						Rates irrespective of load.			
537	Bharwari . . .		0	6	10		0	5	3
564	Khaga . . .		0	6	10		0	5	3
633	Cawnpore . . .		0	6	10		0	5	3
720	Etawah . . .		0	8	0		0	6	0
820	Farukhabad (branch line)		0	8	10		0	6	10
806	Hathras . . .		0	8	9		0	6	9
825	Aligarh . . .		0	8	11		0	6	11
856	Khurja City .		0	9	0		0	7	2
866	Bulandshahr (branch line)		0	9	1		0	7	3
891	Ghaziabad . . .		0	9	3		0	7	5

The foremost feature in these rates is that whether the stations are situated on the Loop line close to the river Ganges, or on the chord line, or on the Grand Chord line, or on a branch, the charge for a lesser distance is not greater than for a longer. To observe this principle it will be seen that the low rate quoted at Cawnpore has been applied differentially as far as Bharwari (*i.e.*, 633 mile rate has been applied differentially up to 537 miles).

It may, however, be argued that this principle has not been applied in the matter of through rates in that the East Indian Railway proportion of through rates say from the Oudh and Rohilkhand Railway or from the Bengal and North-Western Railway are lower than the rates applying locally from stations nearer Calcutta than Moghalserai or Mokameh. But the two cases are not analogous. In the case of the through rates the public are concerned in the sum of the through rates, *i.e.*, in the charge on the whole distance. If it be brought forward as an argument that while the rate from Sasaram, 356 miles from Calcutta, is Re. 0-5-2 per maund, that *viâ* Moghalserai, 419 miles, on Babrala traffic is Re. 0-4-4, the reply to this point will be that the through rate from Babrala to Calcutta is Re. 0-9-3 for 833 miles, which is based on the Aligarh-Howrah rate of Re. 0-8-11 for 825 miles. So that if rates from stations of origin to destination are compared distance for distance the rates are fair.

The scale rates for all grain pulses and common seeds on the following railways work out as under :—

Scale rates for wheat and other grains on all Indian Railways.

Miles.	East Indian Railway.	North Western Railway.	Great Indian Peninsula Railway.	Bombay, Baroda and Central India Railway.	Oudh and Rohilkhand Railway.	Bengal Nagpur Railway.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
50 . .	0 1 8	0 1 8	0 2 4	0 1 10	0 2 2	0 1 8
75 . . .	0 1 10	0 1 10	0 2 9	0 2 4	0 2 7	0 2 1
100 . . .	0 2 3	0 2 4	0 3 5	0 3 0	0 2 7	0 2 9
150 . . .	0 2 10	0 3 4	0 4 10	0 3 4	0 3 0	0 4 2
200 . . .	0 3 5	0 4 2	0 6 3	0 3 11	0 3 10	0 5 7
250 . . .	0 4 0	0 5 1	0 7 7	0 5 4	0 4 6	0 6 11
300 . . .	0 4 6	0 5 11	0 9 0	0 6 3	0 4 8	0 8 4
350 . . .	0 5 2	0 6 7	0 9 5	0 6 9	0 5 4	0 8 8
450 . . .	0 6 2	0 7 11	0 9 5	0 7 7	0 6 9	0 9 0
500 . . .	0 6 8	0 8 6	0 9 5	0 8 0	0 7 5	0 8 1
600 . . .	0 7 8	0 9 7	0 9 5	0 8 6	..	0 7 10
650 . . .	0 8 1	0 10 0	0 9 5	0 8 9	..	0 6 0
700 . . .	0 8 6	0 10 7	0 9 5	0 9 0	..	0 6 6
750 . . .	0 8 10	0 11 1	0 10 1	0 9 3	..	0 6 11
	Scale B 1	Col H	Col. J	Scale A	Col. O	Scale Q

There are, however, special lump sum rates, which are generally lower than scale rates, applicable on export traffic to the port, which gives the railway on which the traffic originates the longest lead. The Great Indian Peninsula Railway rates are the highest, except for distances 600 miles and beyond, when the North Western Railway rates become the highest for long distance traffic. It will be noticed that the East Indian Railway rates are the cheapest for all distances up to 600 miles.

The Bengal Nagpur Railway rates are the highest, next to the Great Indian Peninsula Railway, for all distances 150 to 450 miles, but for long distances beyond 600 miles the Bengal Nagpur Railway rates are the lowest. But in the first place the traffic on this line over 600 miles is nominal, and it is particularly to be noted that while the rate for 250 miles is Re. 0-6-11 that for 750 miles also is Re. 0-6-11, while the rates for 300, 350, 450 and 500 miles work out to Re. 0-8-4, Re. 0-8-8, Re. 0-9-0 and Re 0-8-1 per maund respectively.* Further when the traffic goes to Bombay the Bengal Nagpur Railway rates for distances up to say 150 miles are very high—as high as those of the Great Indian Peninsula Railway—

Miles.	*Bengal Nagpur Railway. Rs.	A.	P.	Great Indian Peninsula Railway. Rs.	A.	P.
50	0	2	1	0	2	1
75	0	2	6	0	2	7
100	0	3	5	0	3	3
150	0	4	10	0	4	8

It can therefore be said that low average statistical cost of working of a railway (Bengal Nagpur Railway for instance) or a low average rate is no proof that such a railway always charges even a commodity like grain at low rates. Their low average rate is purely due to the heavy coal traffic.

Great Indian Peninsula Railway.

Great Indian Peninsula Railway wheat traffic and rates.

Out of the total wheat traffic of 8,748,369 maunds 5,789,216 maunds, were for Bombay and the bookings to this port were principally from the following stations :

	From	Maunds	Rate per maund. Rs	A.	P.	Miles.
Bombay Presidency Main Line.	Devlah .	25,683	0	4	0	113
	Nasik . . .	71,289	0	4	1	117
	Nandgaon . . .	25,333	0	5	4	162
	Lasalgaon . . .	256,250	0	4	11	147
Main Line, Central Provinces.	Harda	381,096	0	9	0	417
	Timarni	124,620	0	8	9	435
	Banapura . . .	147,336	0	8	9	443
	Itarsi	79,046	0	8	9	464
Central Provinces Jubbulpur branch.	Semri	104,775	0	8	9	488
	Pipariya	223,350	0	8	9	505
	Gadarvada . . .	79,333	0	8	9	536
	Kareli	162,061	0	8	9	554
	Gotegaon . . .	124,297	0	7	9	583
	Shahpura . . .	56,892	0	7	6	597

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*The Bengal Nagpur Railway have since introduced the following telescopic rates for wheat and other grains and seeds :—

For distances up to 300 miles $\frac{1}{3}$rd pie per maund per mile plus for any additional distance above 300 miles $\frac{1}{10}$th pie Therefore, the disparity in rates pointed out will not now exist.

	From	Maunds.	Rate per maund.	Miles.
			Rs. A. P.	
Central Provinces Jubbulpur branch —*contd.*	Jubbulpur . . .	200,740	0 7 0	616
	Nagpur	47,391 45,230	0 7 0	520
	Viâ Gwalior (from G. L. Railway).	25,125		
Central India, Main Line.	Bina	63,235	0 9 7	607
	Bamora . . .	171,728	0 9 7	597
	Bhilsa	288,937	0 9 7	555
	Bhopal	51,822	0 9 7	521
Cawnpore branch, United Provinces.	Cawnpore . . .	30,719	0 8 7	840
	Kunch	31,801	0 9 5	767
Katni branch, Central Provinces.	Saugor	503,742	0 9 7	654
	Damoh	458,978	0 9 6	702
Central India Bina Kotah branch.	Guna	130,888	0 9 7	681
	Baran	318,469	0 9 6	754
Ujjain-Bhopal branch, Central India.	Shujaulpur . . .	102,557	0 7 3	571
	Akodia	44,642	0 7 3	579
Agra-Delhi Chord Railway, United Provinces.	Kosi . . .	62,972	0 9 4	894
Central Provinces	East Indian Railway *viâ* Jubbulpur.	115,574	0 7 0	616
United Provinces	East Indian Railway *viâ* Delhi.	208,486	0 9 11	957
Cawnpore branch, United Provinces.	Bengal and North-Western Railway *viâ* Cawnpur.	36,720	between 0 8 0 and 0 8 7 per maund.	840
	Oudh and Rohilkhand Railway *viâ* Cawnpore.	81,521		840
Agra-Delhi Chord Railway, Panjab.	North-Western Railway *viâ* Delhi.	52,228	0 9 11	957
Nagpur branch, Central Provinces.	Bengal Nagpur Railway *viâ* Nagpur.	1,340,880	0 7 0	520
	Bengal Nagpur Railway *viâ* Jubbulpur.	449,296	0 7 0	616

It has already been observed that the Great Indian Peninsula Railway rates for grain, as compared with the rates of other lines, are on the whole high.

It will also be noticed that while the rate from Jubbulpur is Re. 0-7-0 for 616 miles the rates for stations nearer Bombay are higher; for instance, while from all stations, say Kareli to Timarni (for distances 554 to 435 miles), a group rate of Re. 0-8-9 is quoted, the rate from Harda on the same line of the railway is Re. 0-9-0 for 417 miles. It does not, however, seem that this higher rate has affected the traffic in any way, because taking all stations Jubbulpur to Harda, the quantity despatched from Harda was at the highest figure. Harda is a changing station from which goods trains start, it gives a bigger traffic, and the merchants at Harda may say that they are not accorded the same treatment as merchants at stations further away from Harda, which include road side stations with lesser traffic.

The rates from stations Jubbulpur to Gotegaon, for distances of 616 to 513 miles, are still lower for longer distances. This is because the East Indian Railway rate from Jubbulpur to Howrah is Re. 0-8-0 per maund for 733 miles. But a group rate of Re. 0-8-9 or a rate of Re. 0-9-0 per maund seem to be possible for all stations Shahpura to Harda (597 to 417 miles) if the Jubbulpur rate had been fixed at Re. 0-9-0 as only one anna difference in favour of Calcutta cannot have much effect on the despatches to either port

The rates on the Jubbulpur-Gadarvada section of the Great Indian Peninsula Railway have some relation to rates on the Katni-Saugor section (which runs parallel to and north of the former section and there are pucca roads running from Damoh and Saugor to Jubbulpur and Karachi on the Jubbulpur branch); but it is observed that the rates from Saugor and Damoh, two important stations on this latter section, to Bombay are quoted at Re. 0-9-7 and Re. 0-9-6 respectively, so that a rate of Re. 0-9-0 from stations on the Jubbulpur line will not be such as to divert the traffic or to affect the traffic adversely, because the traffic from stations with Re. 0-9-0 rate is bigger. This will avoid disparity in rates, which now exists.

Besides the traffic to Bombay, the next important traffic in wheat is that to the cotton producing district stations, such as the following, which received the traffic noted against each station :—

	Maunds.
Jalgaon	116,413
Dhamangaon	114,214
Amraoti	100,829
Malkapur	59,727
Nandura	53,466
Shegaon	64,482
Akola	39,436

The traffic to such stations give loads to wagons in both directions, for the wagons coming in with grain are back loaded with cotton. The traffic received at Amraoti paid an average rate of Re. 0-6-2 per maund (weight 100,829 maunds—earnings Rs. 39,162), and according to their local scale of grain rates this rate gives them an average lead of 220 miles, for which distance the East Indian Railway scale rate would have been Re. 0-3-7 per maund.

Some interesting features in rates making of a railway will be seen from the following statement of rates:

A discussion on adjustment of rates by alternative route causing undue preference.

Rates for wheat from stations on the Jubbulpur Itarsi section of the Great Indian Peninsula Railway to Delhi.

Distance to Delhi

ROUTE No 1	ROUTE No 2								
Via Great Indian Peninsula Railway direct (*via* Itarsi, Jhansi, and Agra and Agra Delhi Chord).	*Via* East Indian Railway (*via* Jubbulpore and Allahabad)			STATIONS	RATE BY ROUTE (1)		RATE BY ROUTE (2)		
Great Indian Peninsula Railway	Great Indian Peninsula Railway	East Indian Railway	TOTAL		Special rate	Ordinary scale rate	Great Indian Peninsula Railway	East Indian Railway	TOTAL.
Miles	Miles	Miles	Miles		Rs A P	Rs A P	Rs A P	Rs A P	Rs A P
627	19	618	637	Shahpura	0 7 11		0 1 3	0 6 8	0 7 11
613	33	618	651	Gotegaon	0 8 4		0 1 8	0 6 8	0 8 4
605	43	618	661	Karakbel	0 8 7		0 1 11	0 6 8	0 8 7
594	53	618	671	Narsingpur	0 8 11		0 2 3	0 6 8	0 8 11
584	63	618	681	Kareli	0 9 2		0 2 6	0 6 8	0 9 2
646		618	618	Jubbulpur	0 6 8			0 6 8	0 6 8

The rates by route (1) are those obtainable by route (2), under the Great Indian Peninsula Railway rule, which specifies that in local booking between any two stations on the Great Indian Peninsula Railway the rates obtainable by the alternative foreign railway route are applied to the local route and the traffic carried thereby provided that the rates do not fall below the minimum, which they do not in this case.

In the first place, it may be pointed out by the public that while the rate by the Great Indian Peninsula Railway route for 646 miles from Jubbulpur to Delhi is Re. 0-6-8 the rates from Shahpura, Gotegaon and Narsingpur for 627, 613 and 594 miles by the same route, Great

Indian Peninsula Railway route No. (1), are Re. 0-7-11, Re. 0-8-4 and Re. 0-8-7 respectively, *i.e.*, the rates for shorter distances are higher.

The Great Indian Peninsula Railway case is this :—

Their ordinary scale rate from all their stations, including Jubbulpur to Delhi, is Re. 0-9-3, *i.e.*, the rates for shorter distances are not greater although they are not lower.

But as the East Indian Railway rate from Jubbulpur to Delhi for 618 miles is Re. 0-6-8, the Great Indian Peninsula Railway have between the same points (*viz.*, between Jubbulpur and Delhi) equalised their rates with those of the East Indian Railway and have reduced the Jubbulpur-Delhi rate from Re. 0-9-3 to Re. 0-6-8 per maund although their distance is 616 miles against the East Indian Railway distance of 618 miles. This is under agreement with the East Indian Railway. Even if the Great Indian Peninsula Railway had not reduced the rate from Jubbulpur Junction they would have had to do so from their internal stations short of Jubbulpur if they wanted to retain the traffic, originating on its line (which line also offers the shortest route) to their local route instead of letting it go over the East Indian Railway *viâ* Jubbulpur (longer route) giving the Great Indian Peninsula Railway a very short lead.

The Great Indian Peninsula Railway have therefore, for such internal stations, quoted special rates (lower than their scale rate of Re. 0-9-3 and equal to the rates obtainable by the longer route *viâ* Jubbulpur), but in doing so the rates for longer distances by the Great Indian Peninsula Railway) from stations near Jubbulpur have become higher than the rates for shorter distances. For instance, while the rate from Gotegaon, 613 miles to Delhi *viâ* the Great Indian Peninsula Railway direct and 651 miles *viâ* Jubbulpur, is Re. 0-8-4 per maund, that from Shahpura (627 miles by the Great Indian Peninsula route and 637 miles *viâ* Jubbulpur) is Re. 0-7-11.

The Great Indian Peninsula Railway argument will be that the rates are not fixed by the shorter route but by the longer route, and that if the latter is taken into account (although the traffic follows the former or shortest route) the rates for shorter distances are not higher than for longer distances and that but for reductions on the part of the East Indian Railway in the rate from Jubbulpur the despatchers at the internal Great Indian Peninsula Railway stations would not have had the benefit of a lower rate than Re. 0-9-3.

But the reply of the merchants, say at Gotegaon or at Narsingpur, will be that under the scale rate they had the same advantage in the Delhi market as the despatchers at say Shahpura and that although they have now the benefit of low rates they cannot afford to compete with Shahpura.

They may also point out that taking the shortest route *viâ* the Great Indian Peninsula Railway Gotegaon or Narsingpur is nearer Delhi than even Jubbulpur by the shortest East Indian Railway route.

They may say that they do not object to the Great Indian Peninsula Railway quoting Re. 0-6-8 rate from Jubbulpur, but what they point out is that if the Great Indian Peninsula Railway can afford a rate of Re. 0-6-8 from Jubbulpur to Delhi for 616 miles they can surely afford a lower or an equal rate from Narsingpur or Gotegaon for 594 and 613 miles respectively.

But the Great Indian Peninsula Railway reply again will be that in case they had not reduced the rate from Jubbulpur to Delhi the merchants could not have raised the point of undue preference and that Jubbulpur would have yet had a lower rate than Narsingpur or Gotegaon with this difference that the Great Indian Peninsula Railway would have been the loser without any gain to the Narsingpur or Gotegaon merchants. This is a very forcible argument.

However there is one more point. If the Great Indian Peninsula Railway had not reduced the rates they would have earned on Narsingpur or Gotegaon traffic not more than Re. 0-1-8 or 0-2-3 per maund as the traffic would have then gone *via* Jubbulpur over the East Indian Railway. Whereas if they charge Re. 0-6-8 from stations short of Jubbulpur the same rate as from Jubbulpur they would be -

(1) retaining the traffic to their route and
(2) earning much higher than Re. 0-1-8 or Re. 0-2-3
(3) and at the same time adhering to the principle that the charge for the lower distance should not be greater.

The Great Indian Peninsula Railway will naturally say that they are minimising the loss in their earnings by charging for internal stations such rates as they can afford to charge without loss of traffic to the Great Indian Peninsula Railway, whereas the merchant's case is that the Great Indian Peninsula Railway rates are causing discriminations and placing the merchants at stations near Delhi at a disadvantage as compared with merchants at stations further away, and that if the Great Indian Peninsula Railway can afford to accept the same rate as the East Indian Railway at Jubbulpur they should be able to accept the same rate for internal stations. To put briefly the merchant's case is this :—

"Minimise your loss as far as possible but at the same time consider our loss too. Do not cause such discriminations in our rates so as to reduce our chances of profit at a market to which we are nearer than places to which you give lower rates of freight."

There is a great deal to be said on both sides. The English Act, provides as follows :—

"The Commissioner shall have power to direct that no higher charge shall be made to any person for services in respect of merchandise carried over a less distance than is made to any other person for similar services in respect of the like description and quantity of merchandise carried over a greater distance on the same line of a railway."

There is no such clear law in India. While this clause is in favour of the merchants, the following clause seems to protect the railways to a certain extent:—

"In deciding whether a lower charge or difference in treatment does or does not amount to an undue preference the court having jurisdiction in the matter or the Commissioners, as the case may be, may, *so far as they think reasonable*, in addition to any other consideration affecting the case, take into consideration whether such lower charge or difference in treatment is necessary for the purpose of securing in the interests of the public the traffic in respect of which it is made, and whether the inequality can not be removed without unduly reducing the rates charged to the complainant. Provided that no railway company shall make, nor shall the court or the Commissioners, sanction any difference in the tolls, rates, etc., or charges made for or any difference in the treatment of home and foreign merchandise in respect of the same or similar services."

A great deal depends on what in each case can be fixed, on the circumstances of the case, the limit beyond which the reduction will be undue. The merchants in the particular case will make out for reasons already stated that such a limit in the particular case would be Re. 0-6-8 whereas the Great Indian Peninsula Railway case would be that the limit would be the rate obtainable by the longer route.

Oudh and Rohilkhand Railway.

This railway deals with a fairly large amount of traffic in wheat, the largest proportion of which finds its way to Calcutta.

Taking 1911, as a good average year, it is noticed that out of the total weight of 6,681,203 maunds handled by this railway, the following traffic went to the three ports (*viz.*, Calcutta, Karachi and Bombay).

To—	Maunds.
Calcutta	4,167,707
Karachi	348,761
Bombay	174,229
	4,680,697

so that about 20·lacs of maunds were booked to stations in India for local consumption.

The distribution of traffic from the important stations to the various ports was as follows :—

Oudh and Rohilkhund Railway wheat traffic and rates.

Weight of traffic in maunds in the year—1911.

Name of Station.	Calcutta.	Bombay.	Karachi.
	Maunds	Maunds.	Maunds.
Barabanki	98,045	..	..
Bahramghat	175,207	3,239	..
Thompsonganj	101,505	1,561	..
Madhoganj	281,100	6,544	..
Hardoi	204,845	3,148	..
Shahjahanpur	347,155	2,737	6,077
Malhabad	7,653	8,058	..
Tilhar	169,487	.	.
Bareilly	126,456	.	..
Roorkee	..		31,252
Chodiala		.	15,914
Rampur	102,529		104,517
Aonla	141,973	9,280	..
Chandausi	652,382	21,353	71,209
Harduaganj		1,031	..
Bijhoi	139,888	.	..
Hapur	20,682	..	..
Moradabad	180,634	..	65,687
Kandarki	47,761	.	9,911
Khanth	157,475	.	38,771
Lucknow	37,586	.	.
Via Lucknow (from Rohilkhund and Kumaon Railway)	177,193	5,051	
Rai Bareilly	59,946	.	..
Akbarpur	18,737		..
Katahri	25,258		..
Daryabad	65,133	1,691	..
Safdarganj	39,865	..	..
Bindaura	40,529	.	..
Sandila	64,224	14,818	..
Balamau	60,294	2,723	..
Anjhi	70,560	27,729	..
Maholi	37,507	..	..
Fatehganj	51,139	..	..
Babrala	64,714	..	..
Dibai	76,830	66,233	..
Amroha	69,511	..	..
Raisi		..	3,544
Landhaura		..	6,464

It will be seen that the takings by the Karachi port were confined to stations situated outside the province of Oudh (Shahjahanpur and west thereof).

A statement is appended showing the railway rates (old and new)

Rates to Karachi, New.			Rates to Karachi, Old.			Rates to Bombay, Old.			Rates to Bombay, New.	
Oudh and Rohilkhund Railway	North Western Railway	Total.	Oudh and Rohilkhund Railway	North Western Railway.	Total.	Oudh and Rohilkhund Railway.	Great Indian Peninsula Railway.	Total.	Oudh and Rohilkhund Railway.	Great Indian Peninsula Railway
A. P.	A. P.	A. P	A P	A P	A. P	A P	A. P.	A. P.	A. P	A. P
3 7	8 7	12 2	3 1	7 6	10 7	2 6	7 0	9 6	2 6	8 7
3 9	8 7	12 4	3 3	7 6	10 9	2 7	7 0	9 7	2 9	8 2
4 9	8 7	12 7	3 6	7 6	11 0	2 7	7 0	9 7	3 1	8 5
4 9	8 7	12 7	3 6	7 6	11 0	2 7	7 0	9 7	3 1	8 5
3 3	9 10	13 1	2 6	7 6	10 0	2 11	7 0	9 11	3 5	8 1
3 2	8 11	12 1	3 5	7 6	10 11	2 6	7 0	9 6	3 0	8 6
3 1	8 9	11 10	3 5	7 6	10 11	1 8	7 0	10 8	3 2	9 9
1 4	9 10	11 2	1 4	7 6	8 10		.		O. & R 3 9 E. I. R 0 4	9 5
4 0	8 7	12 7	via Meerut city 3 3	7 11	11 2	via Cawnpore 1 4	7 0	11 4	E. I. R 3 1 O & R 0 4	9 6
3 1	9 0	12 1	2 8	7 6	10 2	3 4	7 0	10 4	4 0	8 4
3 1	8 10	11 11	Via Meerut City 2 10	7 11	10 9			.	O. & R 2 11 E. I. R 0 4	9 8
4 0	8 7	12 7	3 6	7 6	11 0	2 7	7 0	9 7	2 9	8 5
1 3	9 6	10 9	Via Meerut City 1 3	7 11	9 2	..	..	..	..	..
2 10	8 0	10 10	Via Aligarh Hathras, Kuchman Road and Hyderabad Sind 1 6	7 11	9 5	2 5	7 0	9 5	2 11	8 6

to the three ports from the important stations.

TOTAL.		RATES TO CALCUTTA, OLD.			RATES TO CALCUTTA, NEW.			Mileage *vid* Moghal-serai	Mileage *vid* Cawn-pore.	Mileage *vid* Saharan-pur.
		Oudh and Rohil-khund Railway.	East Indian Railway	TOTAL	Oudh and Rohil-khund Railway.	East Indian Railway	TOTAL			
A. P		A P	A P	A P	A P	A P	A P			
11 1	Barabanki	2 5	3 8	6 1	3 2	4 10	8 0	192	62	340
10 11	Bahramghat	2 7	3 6	6 1	3 5	4 7	8 0	213	84	361
11 6	Madhoganj	2 10	3 6	6 4	3 8	4 7	8 3	255	102	294
11 6	Hardoi	2 9	3 6	6 3	3 7	4 7	8 2	261	108	259
11 6	Shajhahanpur	3 2	3 6	6 8	4 1	4 6	8 7	299	147	220
11 6	Aonla .	3 5	3 6	6 11	4 5	4 6	8 11	361	208	173
12 11	Bareilly .	3 5	3 6	6 11	4 3	4 4	8 7	343	191	176
13 6	Roorkee*	4 10	3 8	8 6	5 9	4 5	10 2	498	.	22
12 11	Rampur*	3 9	3 6	7 3	4 9	4 5	9 2	382	.	137
12 4	Chandausi	3 9	3 6	7 3	4 9	4 6	9 3	387	234	147
12 11	Moradabad*	4 0	3 6	7 6	5 0	4 4	9 4	399	..	120
11 2	Rai Bareilly	2 5	3 6	5 11	3 2	4 8	7 10	149	93	370
	Hapur .	3 11	3 6	7 5	5 0	4 4	9 4	464	.	185
11 5	Debai .	3 10	3 6	7 4	4 10	4 5	9 3	422	269	182

* The rates for these stations to Bombay *vid* Agra Delhi Chord and the Bombay, Baroda and Central India Railway broad gauge route are one anna lower.

On the whole the rates appear to be fair although some of them might be complained of by certain traders, for instance, from Shahjahanpur the Oudh and Rohilkhund Railway rates—

for Calcutta (up to Moghalserai) for 299 miles (or say 300 miles) is Re. 0-4-1.
for Bombay (up to Cawnpore) for 147 miles is Re. 0-3-5.
for Karachi (up to Saharanpur) for 220 miles is Re. 0-3-3.

In this case the Bombay port may have cause for complaint, whereas in connection with say Aonla, Karachi has more cause for complaint because

for Calcutta (up to Moghalserai) for 361 miles the rate is Re. 0-4-5,
for Bombay (up to Cawnpore) for 208 miles the rate is Re. 0-3-0
but
for Karachi (up to Saharanpur) for 173 miles the rate is Re. 0-3-2.

But if the same telescopic scale of rate or a sliding scale of rate (subject to the differential rate, that is, the charge for the greater distance should not be smaller than for the lesser distance) were applied to the junctions for all the ports this disparity would not have occurred and at the same time the object of making the mileage rate lower as the distance increases would have been attained.

As it has already been observed in previous chapters, it pays the Oudh and Rohilkhund Railway better to carry traffic to Calcutta because of such traffic being used for back loading empty wagons returning to the East Indian Railway after discharging coal, and as the weight of coal traffic to the Oudh and Rohilkhund Railway *viâ* Moghalserai is greater than the proportion of grain and goods traffic from this Railway to *viâ* Moghalserai, it is economic working to find as much traffic as possible to reduce the percentage of empty running. but such an action is only commendable so long as it does not unduly hamper the flow of traffic in the direction it has the tendency to move and is not detrimental to the interests of the producer.

It is seen that the flow of traffic from the Oudh and Rohilkhund Railway is in the direction of Calcutta and it is also observed that the area under wheat cultivation in the districts served by the Oudh and Rohilkhund Railway has steadily improved, for instance as follows :—

In Meerut District—
from 327,496 acres in 1908-09 to 385,500 acres in 1912-13.
In Bulandshahr District—
from 163,756 acres in 1908-09 to 210,282 acres in 1912-13.
In Aligarh District—
from 134,875 acres in 1908-09 to 189,690 acres in 1912-13.
In Bareilly District—
from 177,953 acres in 1908-09 to 222,869 acres in 1912-13.
In Bejnor District—
from 166.823 acres in 1908-09 to 175,029 acres in 1912-13.

In Moradabad District—
from 319,188 acres in 1908-09 to 383,398 acres in 1912-13.

In Shahjahanpur District—
from 226,217 acres in 1908-09 to 268,518 acres in 1912-13.

In Jaunpur District—
from 44,627 acres in 1908-09 to 52,100 acres in 1912-13.

Taking the Agra Provinces north and west, including Oudh, the development has been in the wheat acreage as shown below :—

	Acres.
1890-91	5,606,000
1902-03	5,984,000
1904-05	6,539,000
1910-11	6,126,000
1911-12	6,310,000

Bengal Nagpur Railway Wheat traffic.

Bengal Nagpur Railway wheat traffic and rates.

The great bulk of the wheat traffic of the Bengal Nagpur Railway is from the Central Provinces, principally from the districts of Nagpur, Bhandara, Balaghat, Drug, Raipur, Bilaspur and Chhindwara. The improvement in the area under wheat cultivation in the Central Provinces has not been satisfactory.* For instance, the total acreage under wheat was 4,112 000 in 1890-91, whereas the largest figure since 1900-01 to 1911-12 was during 1911-12, *viz.*, 3,291,000 acres. This, however, is not the case in connection with rice in which there has been a satisfactory rise in the area under cultivation in this province, for while during 1890-91 the acreage was 1 009,000 that in 1911-12 was 5,503,000.

Whereas the wheat traffic is principally for export which finds its outlet *viâ* the port of Bombay, the rice grown in the Central Provinces is partly exported and partly sold in the cotton growing districts of Berar. During the year 1911, the weight of the wheat traffic on the Bengal Nagpur Railway was 122,155 tons of which more than 70,000 tons were sent to Bombay *viâ* Nagpur while Calcutta took 36,688 tons only. The principal wheat despatching stations were :—

	Tons.
Tumsar Road	3,339
Seoni	11,494
Dongargarh	8,239
Chhindwara	1,739
Raj Nandgaon	11,930
Drug	10,439
Raipur	8,744
Bhatapara	14,593
Bilaspur	2,376

The rates from these stations as they were previous to October 1916 and as they are to-day to both Calcutta and Bombay are shown in the statement appended on next page—

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* Due largely to area previously under wheat being now under rice or cotton cultivation.

BOMBAY NEW RATES.			BOMBAY OLD RATES.			MILEAGE TO BOMBAY.			Name of Station.	Mileage to Shalimar (Calcutta)	CALCUTTA.	
Bengal Nagpur Railway.	Great Indian Peninsula Railway.	TOTAL.	Bengal Nagpur Railway.	Great Indian Peninsula Railway.	TOTAL.	Bengal Nagpur Railway.	Great Indian Peninsula Railway	TOTAL.			Old rates.	New rates.
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.						Rs. A. P.	Rs. A. P.
0 2 1	0 7 0	0 9 1	0 2 1	0 5 5	0 7 6	50	520	570	Tumsar Road .	651	0 6 2	0 6 2
0 3 10	0 7 0	0 10 10	0 5 7	0 4 4	0 9 11	201	520	721	Seoni . . .	740	0 7 0	0 7 0
0 3 4	0 7 0	0 10 4	0 4 0	0 4 4	0 8 4	241	520	761	Chhindwara . .	780	0 7 5	0 7 5
0 4 2	0 7 0	0 11 2	0 4 2	0 5 5	0 9 7	127	520	647	Dongargarh . .	575	0 6 11	0 7 9
0 4 9	0 7 0	0 11 9	0 4 9	0 5 5	0 10 2	146	520	666	Raj Nandagaon .	556	0 7 1	0 7 6
0 5 3	0 7 0	0 12 3	0 5 3	0 5 5	0 10 8	165	520	685	Drug . . .	537	0 7 9	0 7 9
0 5 11	0 7 0	0 12 11	0 5 10	0 5 5	0 11 3	188	520	708	Raipur . . .	514	0 8 3	0 8 3
0 7 0	0 7 0	0 14 0	0 7 0	0 5 5	0 12 5	228	520	748	Bhatapara . .	474	0 8 6	0 8 6
0 7 2	0 7 0	0 14 2	0 7 2	0 5 5	0 12 7	257	520	777	Bilaspur . .	445	0 9 1	0 9 1

Taking Dongargarh, Drug and Raipur, which are respectively 127, 165 and 188 miles from Nagpur, it is observed that the rate charged is ⅓ pie per maund per mile *plus* 7 to 8 pies terminal. That these are undoubtedly "block rates" is evident from the fact. While there is absolutely no terminal levied by that railway on grain traffic (including wheat) for distances over 75 miles, a special terminal is levied on Bombay traffic in addition to the maximum rates even though the lead of the Bengal Nagpur Railway on such traffic may be nearly 200 miles in some cases. It is also to be observed that while the rate from Rajnandgaon to Calcutta for 556 miles over the Bengal Nagpur Railway was Re. 0-7-1 per maund that from Bilaspur to Nagpur on Bombay traffic for 257 miles only was Re. 0-7-2 per maund.

It may also be pointed out that while the rate from Rajnandgaon to Calcutta has since October 1916 been fixed at Re. 0-7-6 for 556 miles that for 537 miles from Drug to Calcutta is Re. 0-7-9; that is charge for lesser distance is greater on the same line and for traffic carried in the same direction and in same quantities.

These rates have been discussed in the chapter on "Undue Preference" *

Bombay, Baroda and Central India Railway rates.

Bombay, Baroda and Central Indi rates on wheat.

The wheat traffic of the Bombay, Baroda and Central India Railway is principally from the United Provinces and the Punjab and partly from Central India. The great bulk of the traffic is to the Bombay port and the following were the places which despatched wheat largely to Bombay during 1911 :—

	Weight in tons.
Viá Kankra Khari (Tapti Valley Railway) . . .	4,462
Indore	2,760
Viá Nagda	19,813
Stations on the Rewari Bhatinda and Fazilka Section .	17,321
Viá Delhi (East Indian Railway)	1,002
Viá Bhatinda (North Western Railway) . . .	2,758
Kot Kapura	883
Stations on the Godhra Rutlam Nagda Section . .	3,338
Viá Bharatpur	2,470
Viá Muttra	1,684
Mhow	798
Stations on the Malwa section except Indore, Mhow and *viá* Chitorgarh	1,847

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* Since writing the above the B. N. Railway have removed the anomalies by introducing a telescopic scale of rate and by making their 8 pies terminal and the scale general, *i.e.*, they apply equally to Calcutta and to Bombay.

The railway rates over the Bombay, Baroda and Central India Railway from these places are as shown below as compared with rates that were in force prior to October 1916 :—

Old rate.			Stations.	Miles.	New rate.		
Rs.	A.	P.			Rs.	A.	P.
0	3	3	*Viâ* Kankra Khari	163	0	3	3
0	6	2	„ Sabarmati	313	0	6	2
0	7	3	Indore	480	0	7	3
0	7	0	Nagda	432	0	7	0
0	9	5	Bhatinda	983	0	10	5
0	9	6	Kot Kapura	1,009	0	10	7
0	7	4	Mhow	493	0	7	4
0	5	11	Godhra	290	0	5	7
0	3	3	Surat	165	0	3	3
0	6	2	Ahmedabad	308	0	6	2

Wheat rates of this line have already been commented upon in chapter III. The Bombay, Baroda and Central India Railway rates for both local and through traffic are on the whole fair, *vide* pages 218 and 317.

Bengal and North-Western Railway rates.

The Bengal and North-Western Railway serves a fertile area north of the Ganges and does a fairly large business in wheat. During the year 1911, its total wheat traffic amounted to 3,453,573 maunds, of which a very large portion was despatched to Calcutta *viâ* Mokameh Ghat, and almost every station of this railway in the United Provinces and Behar has got some traffic in wheat. The largest despatching stations were as follows in 1911 :—

Total wheat traffic during 1911 maunds 3,153,573 = Rs. 7,11,685

Outward traffic of the following stations :—

Bengal and North-Western Railway wheat rates and traffic.

Names of stations	Weight, maunds.
Gonda	228,373
Basti	54,312
Balrampur	326,633
Tulsipur	64,107
Uska Bazar	101,860
Bahraich	218,219
Nanpara	182,737
Naipalganj Road	90,123
Nawabganj	150,525
Bengal and North-Western Railway *viâ* Cawnpore	36,720
	1,453,609

Inward traffic of the following stations :—

Name of station.	Weight, maunds.
Chupra	69,012
Muzaffarpur	29,244
Via Mokameh Ghat (East Indian Railway)	1,947,979
„ Bhagalpur (East Indian Railway) . . .	102,124

As have been remarked in previous chapters, the rates of the Bengal and North-Western Railway are very largely dependent on the rates to and from the corresponding stations of the East Indian and Oudh and Rohilkhund Railways south of the Ganges and the Gogra respectively. A table is given on next page showing the present rates and those in force prior to October 1916 from a few important stations to both Calcutta and Bombay.

BOMBAY OLD RATE.						* HOWRAH OLD RATE.						Names of stations.	BOMBAY NEW RATE.			HOWRAH ACTUAL WEIGHT NEW RATE.		
Bengal and North-Western Railway.	Great Indian Peninsula Railway.	TOTAL	Bengal and North-Western Railway.	Great Indian Peninsula Railway	TOTAL.	Bengal and North-Western Railway.	East Indian Railway	TOTAL	Bengal and North-Western Railway.	East Indian Railway	TOTAL		Bengal and North-Western Railway	Great Indian Peninsula Railway	TOTAL *	Bengal and North-Western Railway.	East Indian Railway.	TOTAL. *
Miles	Miles	Miles	A P	A P	A P	A P	A P	A P	Miles	Miles	Miles.		A P	A P	A P	A P	A P	A. P.
122	840	962	2 6	7 0	9 6	4 0	3 0	7 0	319	284	603	Gonda	3 0	8 7	11 7	4 5	3 4	7 9
146	840	986	3 0	7 0	10 0	4 5	3 1	7 6	337	284	621	Balrampur	3 6	8 7	12 1	4 5	3 1	7 6
160	840	1,000	3 3	7 0	10 3	4 7	3 0	7 7	357	284	641	Bahraich	3 4	8 7	11 11	4 8	3 1	7 9
181	840	1,021	3 9	7 0	10 9	4 10	3 1	7 11	378	284	662	Nanpara	3 6	8 7	12 1	4 10	3 1	7 11
153	840	993	3 2	7 0	10 2	3 7	2 9	6 4	316	284	600	Nawabganj	3 6	8 7	12 1	4 6	3 6	8 0

* Grain and seeds in consignments of 30 tons or multiples of 30 tons.

The method of division of rates between the East Indian and the Bengal and North-Western Railways has already been given on pages 69 and 128 in Chapter II, and in the Chapter on maximum and minimum rates the traffic to Bombay and Calcutta in wheat from the Bengal and North-Western Railway has been dealt with.

CHAPTER X.

RICE.

Rice is the staple food of a great mass of the Indian population. India's share of world's production of rice is estimated to be not less than 46 per cent.; but this includes Burma rice as well.

India (proper) grows a large quantity of rice; but consumption is gradually exceeding production, for there has not been any marked expansion in the rice acreage of India. The rice lands in Bengal and East Bengal, which grow by far the largest quantity of rice in India (proper), are being utilised more and more for the cultivation of jute, which fetches a higher market price than rice.

Rice production of India.

Looking at the figures of acreage under rice cultivation in India proper it is noticed that in the period 1890-91 to 1911-12 (20 years) the year 1909-10 had the highest record of 68,277,000 acres, which is shown as follows:—(the next highest figure previous to this year was that of 1898-99 when the total acreage for India (proper) was 67,275,000 acres).

Province.	1909-10 Acres.
Assam	4,386,000
Bengal—Northern and Eastern	9,724,000
Bengal—Southern and Western	14,031,000
Chota Nagpur	4,754,000
Behar	9,671,000
Agra Provinces, East	2,464,000
Bundelkhund	82,000
Agra Provinces north and west, including Oudh	3,542,000
Panjab East	577,000
Panjab West	109,000
Sind	1,098,000
Gujrat	313,000
Konkan	1,014,000
Deccan	539,000
Berar	63,000
Central Provinces	5,470,000
Madras—North-East	4,464,000
Madras—North	409,000
Madras—South	4,089,000
Madras—West	1,478,000
TOTAL	68,277,000
Upper Burma	2,150,189
Lower Burma	7,930,014

Of the total acreage of 68,277,000 acres in India proper Bengal accounted for 23,755,000 acres, or nearly 35 per cent., against 10,080,203 acres, the rice acreage of the whole of Burma.

Bengal grows two crops, *viz.*, winter rice (or aman) and autumn rice (or aus). Whereas the soils best considered for *aus* paddy are loam and sandy loam, situated rather on a higher level, low-lying clayey soils are preferred for the aman (winter) crop. High lands, which cannot be easily irrigated, are not considered suitable for the winter rice crop.

Taking India as a whole, including Burma, the total exports in a year amount to 9 to 10 per cent. of the production ; but if India proper and Burma are separated the proportion of India's exports to its production dwindles down to about 2 or 3 per cent.

Failure of the monsoons in India at once affects the rice crop, but Burma rice intended for export is grown in Lower Burma, where failure of rains is practically unknown. Deficiency of crops in India at once creates a demand for Burma rice, but ordinarily a portion of the surplus of India is exported to Europe and to the Far East.

Indian rice (including Burma rice) taken by Europe is used more for " the distillation of spirits and manufacture of starch than for food, and has to compete with a number of other grains, *viz.*, oats, rye and maize, even with beet and potatoes " ; but the exports to Ceylon, the Straits, Mauritius, East Africa, Brazil and West Indies are for purposes of food. Japan also sometimes takes Indian rice, although it grows considerable quantity itself.

The years 1896 and 1897 saw a widespread failure of crops in India, and during the two years twenty five million maunds of Burma rice were imported into India. There were also imports from Burma during 1900 and 1901, but not in such large quantities as in the two years above mentioned, as the deficiency in India was not so large.

The total production of rice in India (excluding Burma) was as follows during the years 1901-02 and 1911-12 :—

	Maunds.
1901-02	68,70,64,000
1902-03	81,47,74,000
1903-04	78,22,72,000
1904-05	77,20,97,000
1905-06	74,50,11,000
1906-07	75,23,62,000
1907-08	59,95,06,000
1908-09	67,69,33,000
1909-10	84,13,45,000
1910-11	82,36,49,000
1911-12	79,51,38,000

It is true that during 1909-10 there was a distinct rise in the production, which, however, did not equal the figures of 1894-95, when the yield amounted to 88,11,35,000 maunds. Therefore it is not wrong to say that there has not been an expansion in the rice production of India (proper) during recent years. On the next page is a statement showing the rice traffic of the various railways carried during the period 1908 to 1914-15. The figures of rice (not in the husk) and of paddy (rice in the husk) are given separately.

It may not be generally known that the varieties of rice grown in India are innumerable. Dr. Watt mentions 4,000 varieties of Bengal rice alone.

The outturn of *Paddy* (rice in the husk) in Bengal districts varies from 12 to 25 maunds per acre, and of straw from 20 to 40 maunds. The outturn differs in different districts, under varying conditions; Sir W. W. Hunter gives 15 maunds per acre as the yield of clean rice whereas Sir A. P. McDonell gave 10 maunds of rice for *aman* and 8 maunds for *aus*. The average yield per acre for Bengal for cleaned rice was 851 lbs. or over 10 maunds.

The finer grades of rice are long, thin, sharp pointed grains. The finest rice is also fragrant. The coarser kinds are full bodied grains and deeply scored. The finer qualities are either yellow or white, while the coarser kinds are rather dark.

Railway traffic in rice and paddy.

Rice in the husk (paddy).

Railways.	1908.		1909.		1910.		1911.		1912.		1913-14.		1914-15.	
	Weight.	Earnings.	Weight	Earnings	Weight	Earnings	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs.	Tons.	Rs	Tons	Rs.	Tons	Rs	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Eastern Bengal .	142,373	4,28,943	172,491	7,44,985	111,913	4,64,994	162,819	[illegible]	201,268	[illegible]	223,233	6,60,592	176,330	5,28,064
Assam Bengal .	11,428	40,701	24,551	90,083	21,050	67,586	8,876	24,586	[illegible]	3,22,242	61,216	2,18,012	58,881	2,17,297
East Indian .	62,540	2,45,691	142,441	6,52,165	40,019	1,14,375	67,582	2,30,739	102,592	[illegible]	111,981	3,54,739	101,121	3,55,021
Bengal Nagpur .	95,201	3,21,938	87,753	4,24,347	60,947	1,68,090	52,952	1,57,442	96,606	3,92,918	88,550	2,89,801	68,440	1,75,022
Madras and Southern Mahratta.	174,911	7,67,312	86,806	[illegible]	71,389	3,22,983	112,504	[illegible]	126,691	6,15,499	120,944	5,62,332	123,217	5,52,761
South Indian .	128,038	4,33,564	171,091	6,41,773	170,701	[illegible]	[illegible]	13,06,246	[illegible]	[illegible]	[illegible]	[illegible]	190,330	8,52,041
Nizam's Guaranteed State.	4,499	6,577	1,090	6,002	891	5,695	605	[illegible]	873	[illegible]	1,145	7,471	993	5,826
Great Indian Peninsula.	3,575	12,100	3,376	[illegible]	3,660	12,239	2,963	11,780	3,263	[illegible]	3,225	12,625	3,028	11,677
Bombay, Baroda and Central India.	10,913	36,790	17,832	[illegible]	21,158	73,184	17,420	61,224	11,191	48,840	13,867	53,521	15,995	52,902
Oudh and Rohilkhund.	7,122	26,930	4,941	18,578	3,662	15,618	2,822	14,512	[illegible]	[illegible]	6,877	22,609	8,728	37,400
Bengal and North Western.	107,720	5,49,390	66,229	2,40,345	[illegible]	2,44,858	[illegible]	2,42,777	[illegible]	[illegible]	72,517	2,94,871	58,426	1,97,584
Rohilkhund and Kumaon.	3,334	10,269	9,207	24,724	6,047	16,574	6,783	20,116	8,109	29,022	8,787	12,528	8,170	24,778
North Western .	33,056	1,10,227	38,482	1,13,567	36,855	1,19,155	34,601	1,17,587	43,136	1,15,678	53,105	1,57,213	39,961	1,17,569
Burma.	726,275	32,67,557	735,633	34,27,548	831,530	40,97,444	843,748	42,22,963	809,946	38,59,906	940,222	43,00,631	873,219	41,41,630

Rice not in the husk.

Railways.	1908.		1909.		1910.		1911.		1912.		1913-14.		1914-15.	
	Weight.	Earnings.	Weight	Earnings	Weight.	Earnings.	Weight	Earnings	Weight	Earnings	Weight.	Earnings	Weight.	Earnings.
	Tons.	Rs.	Tons	Rs	Tons.	Rs.	Tons.	Rs	Tons	Rs	Tons	Rs	Tons.	Rs.
Eastern Bengal .	158,844	5,07,469	242,372	10,68,666	169,881	4,39,687	162,745	4,20,402	209,134	6,59,274	236,524	7,42,800	268,408	10,27,460
Assam Bengal .	58,540	3,03,899	35,167	2,20,461	34,698	1,93,083	44,186	1,89,369	55,699	2,46,594	124,222	5,40,227	93,490	474,676
East Indian .	482,949	35,98,211	458,513	30,92,007	327,641	20,17,887	343,228	16,70,811	412,775	19,44,019	385,226	24,32,287	561,292	43,72,078
Bengal Nagpur .	227,347	15,77,454	270,803	19,18,172	250,453	16,78,117	294,567	20,81,566	370,391	29,69,881	286,213	20,87,562	229,826	16,24,106
Madras and Southern Mahratta.	247,868	10,81,174	266,082	16,99,135	279,069	16,63,004	266,910	16,40,016	293,497	19,13,726	256,014	15,31,356	308,660	19,52,109
South Indian .	184,252	6,89,076	191,953	7,75,788	185,475	7,67,006	226,509	9,97,460	226,641	9,59,730	216,385	9,08,662	242,004	10,70,333
Nizam's Guaranteed State.	34,654	1,95,620	18,574	1,00,491	38,964	2,80,939	53,849	3,52,072	51,977	3,61,902	62,808	4,67,825	62,119	4,39,983
Great Indian Peninsula.	107,522	8,60,149	110,013	7,70,715	115,924	8,10,603	163,679	12,22,278	200,708	16,23,544	139,052	9,54,337	148,280	9,86,251
Bombay, Baroda and Central India.	82,073	5,54,857	72,408	5,12,695	70,553	4,72,166	68,737	4,41,563	71,075	5,07,801	59,538	4,60,847	71,720	5,53,839
Oudh and Rohilkhand.	113,969	4,22,520	57,110	2,16,365	43,272	2,38,038	38,677	1,98,917	32,712	1,89,545	58,987	3,13,158	133,162	5,77,147
Bengal and North Western.	180,794	8,01,085	169,285	5,82,301	243,274	11,21,319	284,583	14,01,504	310,981	16,34,561	180,483	7,73,272	212,789	8,49,047
Rohilkhund and Kumaon.	23,127	60,725	11,801	31,209	10,997	27,144	9,555	26,807	9,714	30,907	8,808	23,789	12,693	32,585
North Western .	135,620	8,50,656	162,701	10,47,197	188,786	13,43,002	198,174	13,67,873	177,002	11,09,840	211,877	13,57,143	198,708	12,32,797
Burma . .	141,248	7,18,319	137,430	6,72,027	154,888	7,36,137	140,826	6,81,671	167,767	8,58,455	218,373	11,09,542	245,031	12,46,811

Exports of rice.

The exports of rice (not in the husk) from 1908-09 to 1912-13 were as follows :—

—	1908-09.	1909-10	1910-11.	1911-12.	1912-13.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
To Possessions in the British Empire.	13,317,448	15,350,978	19,679,442	21,577,936	22,805,813
To Foreign countries . .	16,356,323	23,044,125	27,623,395	29,794,223	31,518,589
TOTAL CWTS .	29,673,771	38,395,103	47,302,837	51,372,159	54,324,402

Of the total exports the shares of the various provinces during 1912-13 (which shows the largest figures) were as follows.—

	Cwts.
Bengal	9,635,374
Bihar and Orissa	464,318
Bombay	500,481
Sindh	512,443
Madras	2,220,007
Burma	40,961,779
	54,324,402

Although the rice acreage of Bengal is considerably greater than (even double) that of Burma, the latter province exported more than four times as much as that exported by Bengal, due entirely to the large consumption of rice in Bengal by its vast population.

Indian Railway rates on rice.

The railway rates for wheat and rice are the same, and the scale rates of the various railways compared in the chapter on wheat apply to rice as well, and so also the export rates of the two commodities are identical.

But the rates of some of the rice-carrying lines have not been shown in the chapter on "wheat," because railways like the Eastern Bengal State, Madras and Southern Mahratta, or the South Indian, while carrying large quantities of rice, have a small traffic in wheat.

The Eastern Bengal State Railway scale rate for grain (which includes rice) for the Behar and northern sections is as follows :—

For 1st 100 miles $\frac{1}{6}$ pie per maund per mile, *plus*, for distance in excess of 100 miles, $\frac{1}{7}$ pie per maund per mile.

Over the Eastern, Central and the Dacca sections the Eastern Bengal State Railway charge in through booking $\frac{1}{8}$ pie per maund per mile.

These rates are low enough, but there are also special rates quoted to meet special conditions, principally water competition. Some instances of these special rates are given below :—

Rates to Calcutta at owner's risk in consignments of 100 maunds.

		Per maund.			Distance in miles.
		Rs.	A.	P.	
Central section .	Nabharan to Calcutta . .	0	1	0	59
	Jessore to Calcutta . . .	0	1	2	75
	Daulatpur to Calcutta . .	0	1	6	105
	Khoolna to Calcutta . . .	0	1	6	109
	Chandpur ghat to Calcutta (*viâ Khulna*) Eastern Bengal State Railway proportion . .	0	1	4	
	Barisal to Calcutta (*viâ Khulna*) Eastern Bengal State Railway proportion . . .	0	1	5	
Behar section . .	Purneah to Calcutta . . .	0	5	6	267
	Forbesganj to Calcutta . .	0	6	0	309
	Kissenganj to Calcutta . .	0	5	0	308
Ranaghat Lalgola section.	Lalgolaghat to Calcutta . .	0	2	10	144
Eastern section . .	Chooadanga to Calcutta .	0	1	8	84
	Poradah to Calcutta .	0	1	11	103
Poradah Goalando section.	Kushtia to Calcutta . .	0	1	11	111
	Goalando to Calcutta . .	0	2	0	150
Golakganj . . .	Golakganj	0	5	1	321
Dhubri extension . .	Dhubri to Calcutta . . .	0	5	3	333

Over the same section of the line the rates for the lesser distance are not higher than those for the greater.

It will, however, be observed that the *viâ* Khulna rate (for steamer traffic) is lower than that from Khulna itself or from stations short of Khulna such as Daulatpur. This is due to traffic *viâ* Khulna being available for carriage to Calcutta by the all river route without touching the railway at all.

The "rice" rates of the Assam Bengal Railway have been dealt with separately in Appendix I, and they will not, therefore, be referred to here.

The rates of the East Indian, the Bengal Nagpur, the Bombay, Baroda and Central India, the Great Indian Peninsula, the Oudh and Rohilkhund or of the Bengal and North-Western Railways are not necessary to be referred to again as they are the same for wheat, and the charges over these railways for various distances in local booking as well as for export traffic have already been fully discussed.

The Madras and Southern Mahratta Railway have more than one scales of rates, one set for loads of 81 maunds applicable on the East Coast Railway, and the other for 300 maunds lots on the East Coast Railway, and the third schedule applies over the Madras and Southern Mahratta Railway section proper (*i.e.*, excluding the East Coast section).

I.—For loads of 81 maunds over the East Coast section.

	Pie per maund per mile.
For the first 150 miles	⅙th
plus for distances 151 to 300 miles	⅐th
„ for distances over 300 miles	⅛th

II.—For loads of 300 maunds over the East Coast Railway.

	Pie per maund per mile.
For the first 120 miles	⅙th
plus for distances 121 to 220 miles	⅐th
„ for distances 221 to 370 miles	⅛th
„ for distances over 370 miles	⅑th

III.—For grain and seeds on actual weight applicable over the Madras and Southern Mahratta Section.

	Pie per maund per mile.
For the first 75 miles	⅓rd
plus for distances 76 to 150 miles	¼th
„ „ 151 to 225 „	⅕th
„ „ 226 to 300 „	⅙th
„ „ 301 to 400 „	⅐th
„ „ 401 to 500 „	⅛th
„ „ 501 to 600 „	⅑th
„ „ above 600 „	⅒th

The rates for the East Coast section are necessarily low because of water competition; for instance, while grain (which includes rice), when booked from Cocanada to Madras is charged Re. 0-5-3 per maund, over a distance of 402 miles, the rate from Bangalore City to Madras, for 219 miles, is Re. 0-5-4 per maund.

The South Indian Railway have two separate scales of rates for grain, one applies to grain and pulse generally, and the other applies to rice, jowar and gram. The scales are respectively (*c*) and (*d*) and they are as follows :—

Scale (*c*).

	Per maund per mile. pie.
For the first 100 miles	·30
„ the next 100 (101-200) miles	·20
„ „ 50 (201-250) „	·10
„ „ 350 (251-600) „	·015
„ 601 miles and over	1/10

Scale (*d*).

For distances of above 350 miles	·10

While the "C" scale applies to rice carried for distances less than 350 miles, the "D" scale is chargeable when the lead is over 350 miles; the latter was introduced with the specific object of developing rice traffic for long distances. Apart from these scales there are special quotations which are governed by special circumstances which account for the disparity in the rates; for instance, while the rates from Tanjore and Budalur to Tuticorin are Re. 0-4-2 per maund for 215 and 226 miles respectively the rate from Shiyali on the Coromandal Coast to Tuticorin is but Re. 0-2-6 per maund for paddy and Re. 0-3-5 per maund for rice for 282 miles. The rate of Re. 0-2-6 is equal to ·106 pie per maund per mile, or nearly equal to the minimum.

There is traffic in rice *viâ* Erode Junction, and for such internal traffic, the rates are comparatively high. As for instance, the rate from Aduturai to Erode Junction for 151 miles is Re. 0-3-5 per maund.

The rice traffic of the South Indian Railway finds its outlet *viâ* the several ports, such as the following:—

Viâ Tuticorin
Viâ Dhaneshkudi (through traffic to Ceylon)
Viâ Madras
Viâ Porto Novo
Viâ Quilon, etc.

and the rates are low when the distance is over 300 miles and where there is competition by sea, such as from Shiyali to Tuticorin. In any case, the South Indian Railway scale rates are fairly low.

CHAPTER XI.

JUTE.

The cultivation of jute in India is rapidly advancing owing to the increased demand of its fibre both by the local mills as well as by European countries, Japan and America. A statement is appended below showing figures of exports of raw jute, and local consumption :—

Local consumption and Export of Jute.

	United Kingdom Bales	Continent Bales	America Bales	All other ports Bales	Total exported Bales.	Local Mill consumption in bales (actuals)	Estimated country consumption in bales.	Total jute consumption Indian and Foreign, in bales.
1914-15 .	1,667,169	701,872	538,871	56,150	2,967,062	4,806,000	300,000	8,073,062
1913-14 .	1,548,093	1,962,042	657,105	25,478	4,192,718	4,374,000	300,000	8,866,718
1912-13 .	1,919,129	2,308,440	683,330	31,262	4,942,161	4,431,000	300,000	9,676,161
1911-12 .	1,879,534	2,077,857	642,094	26,765	4,626,250	3,993,000	300,000	8,919,250
1910-11 .	1,310,814	1,854,584	348,746	16,922	3,531,066	3,980 000	300,000	7,811,066
1909-10 .	1,660,360	1,947,880	381,302	19,831	4,009,373	4,459,911	300,000	8,769,284
1908-09 .	1,621,771	2,034,533	956,199	18,108	4,630,611	3,593,000	300,000	8,523,611
1907-08 .	1,650,463	2,000 222	612,492	13,098	4,276,275	3,658,000	300,000	8,234,275

The exports in the past to the United Kingdom were principally to Dundee for its mills, while London also took a considerable amount for re-export to the continent and thus made middleman's profit. The following account of the early jute industry is given in "The Investor's India Year Book 1911."

Early jute industry in India

"The manufacture of jute fabrics is one of the most important of the industries of India, whether looked at from the point of view of the amount of capital invested in the industry, or from that of its development and general prosperity. The use of jute fibre woven by hand looms into bags and coarse cloth for clothing and many other domestic purposes dates back from time immemorial but it was not until the year 1838 that the increasing exports of bags and cloth from Calcutta to the United Kingdom and to various other parts of the world drew attention of the flax and hemp spinners of Dundee to the value of the Indian fibre, and led to the foundation of the Dundee jute industry, which for a long series of years poured wealth in abundance into Dundee."

In 1855, however, the possibility of starting jute mills in India occurred to one Mr. Ackland and the first mill was started in that year.

The figures below give the number of looms and the outturn of the Bengal jute mills during 1890 as compared with 1915 :—

Year.	Sacking looms.	Hessian looms.	Total number of looms.	Number of bags in millions.	Hessians in millions of yards.
1890	6,006	1,958	7,964	137·7	333·9
1915	15,871	22,781	38,652	813·5	1,178·7

Although jute is grown in most districts of Bengal and also in Eastern Behar and in Assam, the following are the principal jute growing districts of Bengal. The acreage and productions are also given below. The figures are for 1912—period before the war—

Production of jute by districts.

District.	Acreage.	Outturn in bales of 400 lbs. each.
24-Purganas	89,200	294,360
Nadia	91,000	259,350
Murshidabad	40,000	114,000
Jessore	165,000	544,500
Khulna	38,100	120,015
Hooghly	60,000	198,000
Rajshahi	80,900	218,430
Dinajpur	116,800	315,360
Jalpaiguri	106,300	227,500
Rangpur	290,000	783,000
Bogra	130,000	312,000
Pabna	220,000	693,000
Maldah	38,000	114,000
Dacca	188,000	535,800
Mymensingh	756,000	2,154,600
Faridpur	125,000	427,500
Bakarganj	29,000	82,650
Tippera	268,000	763,800
Noakhali	26,000	74,100

The Cuttack District in Orissa and some of the other Districts in the new province of Bihar and Orissa produce jute but as the quantity is small it is not mentioned. Madras Presidency also grows some jute.

It will be seen that the districts in order of importance are as follows :—

Mymensingh, Rangpur, Tippera, Pabna, Dacca, Jessore, Faridpur, Dinajpur.

When Purneah was included in Bengal it used to come third in order of importance, next to Mymensingh and Rangpur.

Provincial outturn of jute.

During 1910-11 the total area, the outturn and quantities of export of raw jute were as follows :—

Provinces.	Area under cultivation.	Outturn.	EXPORT TO British Empire.	EXPORT TO Foreign Countries.	TOTAL EXPORT.	Export *viâ*	—
	Acres.	Maunds.	Tons.	Tons.	Tons.		Tons.
Assam .	80,000	935,000	235,183	401,440	636,623	Calcutta	633,563
Bengal. .	2,518,000	33,029,000	..	..	..	Madras }	3,060
Behar . .	240,000	2,212,000	..	..	..		
	2,833,000	36,176,000	..	..			–

Of the quantity exported to the British Empire, United Kingdom alone took 234,719 tons ; out of that exported to the foreign countries Germany alone took 149,066 tons.

The following statement gives the traffic in raw jute of the railways carrying jute largely.

—	1908.		1909.		1910.		1911.		1912.		1913-14.		1914-15.	
	Weight.	Earnings.	Weight.	Earnings	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons	Rs.	Tons.	Rs.
Eastern Bengal Railway.	1,081,873	68,38,048	975,171	64,20,319	923,922	58,47,864	997,517	63,31,875	1,118,254	72,89,363	1,130,662	74,01,391	969,326	54,95,267
Assam Bengal Railway.	117,803	2,70,088	94,542	2,31,300	77,208	1,91,038	97,492	2,28,139	103,417	2,36,104	85,848	2,27,870	84,329	2,28,519
East Indian Railway.	156,443	7,04,975	71,787	1,84,082	78,714	2,11,176	77,820	2,29,724	118,742	4,47,142	95,500	2,52,027	104,063	2,29,710
Bengal Nagpur Railway.	19,891	33,944	18,399	30,078	25,827	44,894	21,476	37,886	35,706	87,178	41,452	1,09,243	33,225	96,200

It is only necessary to discuss the jute rates of the Eastern Bengal State Railway, as the Assam Bengal Railway rates have been dealt with in Appendix I.

The busy season jute rates for drummed jute from the principal despatching stations on the Eastern Bengal State Railway to Calcutta and to the mills in the suburbs of Calcutta are as follows :—

Railway rates for jute

—	Calcutta.	Distance in miles	Titta-ghur.	Sham-nagar	Kanki-nara.	Naihati	Budge-Budge
	Rs. A. P		Rs. A. P	Rs. A. P.	Rs A. P	Rs. A. P.	Rs. A. P.
Fulchhari . .	0 10 0	243	0 9 7¼	0 9 4	0 9 2	0 9 2	0 10 5¼
Daulatpur . .	0 3 11	105	0 4 1¼	0 3 11	0 3 10	0 3 9	0 4 4¼
Khoolna Ghat .	0 4 1	109	0 4 3¼	0 4 1	0 4 0	0 3 11	0 4 6¼
Kushtia . .	0 4 3	111	0 3 10¼	0 3 7	0 3 5	0 3 4	0 4 8¼
Goalundo . .	0 5 3	150	0 4 10¼	0 4 7	0 4 6	0 4 5	0 5 8¼
Atrai . .	0 6 10	171	0 6 5¼	0 6 2	0 6 0	0 6 0	0 7 3¼
Saidpur . .	0 9 6	253	0 9 1¼	0 8 10	0 8 8	0 8 8	0 9 11¼
Domar . .	0 10 0	276	0 9 7¼	0 9 4	0 9 2	0 9 2	0 10 5¼
Haldibari . .	0 10 4	292	0 9 11¼	0 9 8	0 9 6	0 9 6	0 10 9¼
Rungpore . .	0 9 10	266	0 9 5¼	0 9 2	0 9 0	0 9 0	0 10 3¼
Dinajpore . .	0 9 6	263	0 9 6¼	0 9 6	0 9 6	0 9 6	0 9 11¼
Kissengunge	0 10 8	308	0 10 8¼	0 10 8	0 10 8	0 10 8	0 11 1¼
Vid Naraingani .	0 10 0	.	0 9 7¼	0 9 4	0 9 2	0 9 2	0 10 5¼
Vid Jagannathganj	0 8 1	..	0 7 8¼	0 7 6	0 7 4	0 7 4	0 8 6¼
Serajganj . .	0 8 1	.	0 7 8¼	0 7 6	0 7 4	0 7 4	0 8 6¼
Vid Lalmanir Hat	0 10 2	288	0 9 9¼	0 9 6	0 9 4	0 9 4	0 10 7¼

These rates have been taken from the Eastern Bengal Railway Jute Tariff Part I of August 1915 and were in force from 1st July to 31st October.

The following are the rates for pressed jute in bales of 4 maunds from the undermentioned stations to Calcutta :—

Miles.	Name of station.	Rate per 4 maund pressed bale.	Rate per maund.	Rate per maund per mile.
		Rs. A P.	Rs. A. P.	Pies.
243	Fulchhari	1 13 0	0 7 3	·35
105	Daulatpur	0 11 4	0 2 10	·32
109	Khoolna Ghat	0 11 10	0 3 0	·33
111	Kushtia	0 12 4	0 3 1	·33
171	Atrai	1 3 10	0 5 0	·35
253	Saidpur	1 11 7	0 6 11	·32
276	Domar	1 13 0	0 7 3	·31
292	Haldibari	1 14 0	0 7 6	·30
266	Rungpore	1 12 6	0 7 2	·32
263	Dinajpore	1 13 5	0 7 4	·33
308	Kissenganj	1 14 11	0 7 9	·30
288	Lalmanir hat	1 13 6	0 7 5	·30

The following are the basis of rates of the Eastern Bengal State Railway from the various sections of that line :—

" Eastern Section. During the busy season, which extends from the 1st July to the 31st December, approximately $\frac{2}{5}$th pie per maund per mile from the majority of stations and $\frac{1}{2}$ pie per maund per mile from the other stations."

" During the slack season, which covers the remaining six months of the year, the busy season rates are reduced by 30 per cent. over the Eastern Section in through booking *viâ* Bhairamara, and by 2 to 10 per cent. in bookings from a few stations on the Section, *e.g.*, Goalundo, Pachooria, Khankhanapur, Basantapur, Shivarampur, Faridpur, Rajbari, Belgachi, Kalukhali and Pangsa. The rates from the other stations on the Section are not reduced during the slack season.

" Northern Section and Rayganj and stations East thereof on the Behar Section. During the busy season, in through booking *viâ* Bhairamara or *viâ* Lalgola, $\frac{1}{2}$ pie per maund per mile for distances below 100 miles, and " C " Schedules ($\frac{1}{2}$ pie for first 100 miles, *plus* $\frac{1}{4}$ pie for distances in excess of 100 miles) for distances 100 miles and above

" In the slack season these rates are reduced by 30 per cent.

" In local booking over the Northern and Behar Sections the classified rate (3rd class) is charged all the year round.

" Stations West of Rayganj on the Behar Section. During the busy season, approximately $\frac{2}{5}$th pie per maund per mile in booking *viâ* Lalgola, and full classified rate (3rd class) *plus* 6 pies terminal in booking *viâ* Manihari Ghat, the rates to Calcutta stations *viâ* Lalgola being equal to those to Howrah *viâ* Manihari Ghat.

" During the slack season, the portion of these rates, which appertains to the Behar Section only, is reduced by 30 per cent.

" Central Section. Approximately $\frac{2}{5}$th pie per maund per mile all the year round.

" Dacca Section, including Mymensingh-Jagannathganj Railway and Singhjani-Fulchhari Extension—$\frac{1}{4}$ pie per-maund per mile all the year round.

" In booking by the combined Rail and Steamer Service *viâ* Goalundo from Narayanganj and *viâ*, from Jagannathganj and *viâ*, and from Sirajganj and Dhallesary and Pudda stations, as also in bookings *viâ* Khoolna from Madaripur, Bharamganj, Chandpur and *viâ*, Narayanganj and *viâ*, and Pudda stations, the year is divided into three seasons, *viz.*, the busy, which extends from the 1st July to the 31st October, the intermediate from the 1st November to the 31st December, and the slack from the 1st January to the 30th June.

The Railway rates from these stations during the three seasons compare as follows :—

Stations.	Busy season.	Intermediate season.	Slack season.	Route.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Sirajganj and Bera . . .	0 4 8	0 4 5	0 3 4	*Viâ* Goalundo.
Jagannathganj and *viâ* . .	0 4 6	0 4 3	0 3 2	Ditto.
Narayanganj and *viâ* . .	0 4 0	0 3 9	0 3 10	Ditto.
Dhallesary and Pudda stations .	0 4 0	0 3 9	0 2 10	Ditto.
Chandpur and *viâ*, Narayanganj and *viâ* and Pudda stations .	0 3 3	0 3 0	0 2 3	*Viâ* Khoolna.
Madaripur and Bhairamganj .	0 3 3	0 2 10	0 2 3	Ditto.

The traffic is principally in "kutcha" bales (half pressed) *i.e.*—

(1) bales weighing not less than 4 maunds each and measuring not more than 13½ c. ft.

(2) bales weighing 3½ maunds each and measuring not more than 13½ c. ft.

(3) bales averaging 1½ maund each and measuring not more than 5·28 c. ft.

The traffic in fully pressed jute (*i.e.*, in bales of 5 maunds each measuring not more than 10½ c. ft.) is comparatively small with the result that the space occupied in wagon is more than what would be if fully pressed bales are despatched. In order to encourage traffic in pressed bales instead of despatches being made in loose or half pressed condition the following rebates are granted on the rates calculated on the above basis :—

	Per cent. off the drum rate.
Full pressed (pucca) bales averaging 5 maunds each and measuring not more than 10½ c. ft.	30
Half pressed (kutcha) bales weighing not less than 4 maunds each and measuring not more than 13½ c. ft. . . .	27½
Half pressed (kutcha) bales averaging 3½ maunds each and measuring not more than 13½ c. ft.	25
Half pressed (kutcha) bales averaging 1½ maunds each and measuring not more than 5·88 c. ft.	20

Jute occupies an unique position for until it is replaced by a fibre equally useful, durable, cheap and similar in qualities there will be demand for jute.

Whereas jute is very largely used in India in the manufacture of sacks for the carriage of produce, gunnies for packing and canvas, the

European countries have used jute in the manufacture of clothing and shirting, and jute rejections are also used for the manufacture of paper.

Seeing that the railway rates even for commodities like wheat, flour and pulses and other articles of food have been enhanced on Indian Railways it is a matter for consideration whether the railway rates on jute should not also be enhanced, especially because—

Reasons for enhancements of jute rates if required.

(1) it is an expensive commodity to carry; it gives light load to wagons. The figures given in the chapter on Economics of Transportation show that the load per wagon on the Eastern Bengal State Railway is very poor, thus engaging proportionately a larger number of wagons having regard to weight of traffic carried, which not only means a bigger capital cost but greater expenses in working the traffic.

(2) The traffic is subject to several handlings either in transhipment from metre gauge to broad gauge wagons or from river flats into wagons.

(3) The working expenses on the Eastern Bengal State Railway have gone up from 45·35 per cent. in 1897 to 60·8 per cent., which was the average for the years 1911 to 1914-15.

(4) The traffic can very well bear a higher charge as will be seen from the following remarks on page 78 of The Investor's India Year Book for 1916:—

" The outside cost of production as already mentioned, is stated by Mr. Finlow to be Rs. 35 for a crop of 15 maunds to the acre, so that the cost per maund is Rs. 2-5-0. Jute, therefore, at an average selling price of Rs. 5-8-0 per maund, should leave ample margin of profit to those engaged in the handling of the jute before it reaches the mills, whereas the average selling price per maund in Calcutta during the past five years has exceeded Rs. 8 per maund, a price quite out of proportion to the cost of production. Further the cost of the raw material to the consumer is materially raised by fraudulent watering to increase its weight which is extensively practised. The water is added not by the cultivator, but by the middleman, who thus reaps an illicit gain. It is a blot on the industry which it appears unable to check effectively."

It is said that jute helps the ryots a great deal, but the ryots' gains are comparatively small and the gains of the middlemen, who act as buyers for the mills and the shippers in Calcutta, and of the brokers and shippers in Calcutta, all taken together are far greater, whereas the Railway freights are low.

The position of middlemen who buy jute up country was described as follows by the Chairman of the Indian Jute Mill Association at a special meeting of the committee of the association with Sir Henry Burt of the Railway Board on 20th November 1912 *in connection with the transport of jute*—

" It is a question that affects the members of our association but it affects, in a much greater degree the upcountry seller who are responsible for buying of our jute in the districts."

That the traffic can well bear a much higher rate is abundantly evident from the remarks quoted above from the Investors' Year Book, but the point is that it requires a combination between the Railways and the Steamer Companies. Each have an area of its own and the rates are fixed by mutual arrangement, and if both agree that they will not try to filch each other's traffic an increase in the rate is possible.

It may be apprehended that the shippers and mills may combine and build a fleet of their own for jute which can be carried by steamers, but in the first place this must mean a large capital expenditure, even when distributed between the several shipping firms and the mills in Calcutta, and the upkeep and maintenance and the cost of transport will mean heavy operating expenses and all this taken together and seeing that steamers cannot reach many places in northern Bengal, in Assam, Behar and in East Bengal, the mills and shippers will realise that it would pay them to pay higher charges than to build their own fleet of steamers in competition with Railways and the River Steam Navigation Companies. But with the large difference between the cost of production and the selling price the rise in the Railway freight will mean reduction in middleman's profit rather than increased cost to the miller or to the shipper.

Every industry and export and import traffic are paying higher rates since October 1916 over the East Indian, the Great Indian Peninsula, the Bombay, Baroda and Central India, the Oudh and Rohilkhund and other Railways, and as enhancement in the rates for jute will not affect the area under cultivation or the development of traffic, it is worth while raising the railway charges in consideration of the rise in the working expenses. The Railway and Canal Traffic Act of 1913 in England was specially introduced to meet increase of rates in cases of this nature.

CHAPTER XII.

COAL.

Among the mineral products of India, coal is by far the most valuable mineral product which is now being worked. The coal mining industry of India has gradually been on the increase, and this has been effective in gradually diminishing the import of foreign coal into India; nay, a small proportion of Indian coal is now being exported every year.

The following extract from my book, entitled "Indian Railways and Indian Trade" published in 1911, gives some idea of the development of coal industry of the country.

Coal industry of India.

"The remarkable expansion of the coal output has enabled India to hold the first position amongst the coal producing dependencies of the British Empire. The raisings in India are not much below the quantity raised in Japan, but are in excess of the output of Australia, Transval, Natal, or British Columbia. But the total weight of coal, raised in the United Kingdom, is yet nearly 21 times as much, when compared with the tons of coal raised in India in a year."

"Cheap coal is essential for any real progress in industrial development of the country; and cheap fuel is again bound up in the question of cheap railway carriage not only in connection with the export trade, but also on the long lead between the collieries and the consuming market. But it will be demonstrated later on that the railways have done more in this direction than perhaps was expected at the time the trade was agitating for reduced railway rates, not very long ago. The railways in India have, however, been as much benefited by the reduction as the public, if not more. But above all, if one likes to see mill chimneys vomiting forth clouds of smoke in every part of India, the first care of the wellwishers of India's future industrial development should be to see that India can at all times command cheap coal.

"Sir George Watt's Dictionary of Economic Products of India tells us that about 1884 the estimated amount of coal (exclusive of waste) available in Bengal was 14,080,000,000 tons, *viz.*, 14,000,000,000, tons in the Raniganj Field; 80,000,000 tons in the Karharbari or Giridih Field.

"The quantity of coal, mined in Bengal during the 9 years from 1885 to 1893, was 13,747,825 tons; or, towards the end of 1893, the available coal in the two fields named herein was 14,066,252,175 tons.

"The Jherria field was opened in 1893, and the estimate of Sir George Watts in 1889 was that the available coal in the Damudar Valley

(which includes the Jherria, North Karanpara and South Karanpara Fields) was as follows :—

	Tons.
Jherria Field	465,000,000
North Karanpara	8,750,000,000
South Karanpara	75,000,000

" It cannot be said how far these estimates are correct, but from the heavy raisings in the Jherria Field and subsequent investigations, it would seem that if there has been a mistake, it has been on the side of moderation. Anyhow these figures shew that in 1894 the quantity of available coal in Bengal was 23,356,252,175 tons.

" During 15 years, from 1894 to 1909, the raisings amounted to no less than 96,805,059 tons, and assuming that the coal mined in 1910 in these fields was more than in 1908, the total coal, now available in the three fields mentioned, (*viz.* Raniganj, Jherria, and Giridih) would be somewhat near 23,000,000,000 tons in round figures. The output in a year in Bengal comes to, say, 12,000,000 tons ; and accepting that this figure will be very nearly doubled in, say, 7 years and quadrupled in about 10 years,* there is enough coal in the land to meet any future development for many years ; but every year the mining operations will be deeper, which will mean greater cost and more risk in raising. There are other important coal mines in India, which have been discovered, for instance the Ramgarh and Bokaro fields, but these are not being worked for want of railway communication.†

" In 1908, the total quantity of Indian coal mined was 12,769,635 tons, of which the coal fields in Bengal accounted for quite 90 per cent. The interesting note of the Director General of Commercial Intelligence, issued towards the end of October last, on the coal production and consumption in 1909, shews that Jherria contributed 49·1 per cent., Raniganj 34 per cent. and Giridih 5 per cent ; so that in 1909, the raisings in Bengal were over 88 per cent. of the total coal produced in India in that year. The exports of coal in foreign countries and the " bunker coal," used on steamers touching Indian ports was 18,49,150 tons, or 16 per cent. of the total output.

" Before proceeding to remark upon export coal, it will be more useful to deal with the internal coal trade of the country. The use of coal for domestic purposes is yet confined to the districts situated at distances of not more than, say, 250 miles from the coal fields. By far the greatest quantity of coal consumed inland is by railways and partly by mills (cotton and jute), factories, foundries, steamers plying on Indian rivers and for brick burning.

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* Since the above remarks were made in 1911 the drain on Coal Mines of India has been very great, due to supplies demanded by the war, and the question of future coal supply is of great importance. The Ramgarh and Bokaro fields require very deep mining operations.

† Railway communication has been opened to these fields by an extension of the Bengal Nagpur Railway from MOHUDA to BERMO—See pages 362 and 363.

"It has very often been remarked that if coal is freely used as domestic fuel in all parts of India, the agricultural classes would be able to obtain an abundant supply of 'cow-dung' for manure. Further, although the opening of new railways has placed several forest tracts within the reach of the thickly inhabited parts for the latter to draw the supply of firewood from these forests, and it is also to the interest of the country that the jungles should be cleared to allow of more cultivable land being available for agricultural purposes, it is equally essential to the well being of the people that tracts of land should not be denuded of trees for miles together, as it is said that the effect of trees in equalising temperature, in the distribution of rain, and in entrapping rain, is universally recognised. The cutting down of trees in millions every year has been, it is remarked, the cause of rain fall in India becoming more capricious. Therefore, the expansion of coal trade for domestic fuel is really very important, and the development of coal traffic in this direction is really the future of the coal trade of India. It is said on authority that in some parts, the real difficulty against the use of coal is the want of suitable 'choolas' to minimise the discomforts from smoke from coal in an Indian hut, and for baking hand-made 'chapatis.' There is a great future for any one who will undertake the invention of such 'choolas,' and place them along with cheap coal within the reach of the people in the districts far away from the coal fields.

"It cannot at this moment be argued that the high price of coal prevents it from being used more extensively as fuel for cooking; there must be some other reasons, such as those mentioned above, operating against the universal use of coal in India for cooking. It may be interesting to know that in Agra the price of 'ghootias,' or dried cow-dung, is 12 annas per maund, or say, Rs. 20 per ton, whereas coal can now be had in Agra at, say, Rs. 12 per ton, including all charges (not excluding the middle man's profits). In Benares the price of retail firewood is usually 6 annas per maund, or, say, Rs. 10 per ton, but the price of coal in Benares cannot be more than Rs. 8 per ton. It is true that cheapness of price must have its effect in the long run, but if coal is sold in carts from door to door, and suitable 'choolas' are supplied at the same time, the effect will be quicker. Any enterprise in this direction on the lines indicated will be amply repaid.

"As already remarked, the Railways in India consumed the largest quantity of coal produced in the country; during 1909, the weight of coal so consumed was 3,689,093 tons; an idea of the increase of coal, used by railways, can be better imagined, when it is pointed out that in the year 1905 (*i.e.*, before the existing low railway rates came into operation) the quantity of coal, used on railways, was 2,668,424 tons, or, in the space of three years the consumption under this head has gone up by more than 1,000,000 tons. Therefore, it is correct to say that Indian Railways have equally profited with the other Indian industries by the reduction in coal rates.

"The following were the prices of coal since 1904 per ton loaded into railway wagons :—

	Jheria.			Raniganj.		
	Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.
1904 . .	1 12 0	—	2 4 0	2 0 0	—	2 8 0
1905 . .	1 14 0	—	2 12 0	2 8 0	—	3 4 0
1906 . .	3 0 0	—	5 0 0	3 8 0	—	4 8 0
1907 . .	3 8 0	—	4 4 0	3 8 0	—	4 0 0
1908 . .	4 8 0	—	5 0 0	4 0 0	—	5 0 0
1909 . .	2 0 0	—	4 8 0	2 0 0	—	3 8 0

First class.

	Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.
1910 . .	3 0 0	—	3 4 0	3 0 0	—	3 8 0

Second class.

Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.
1 12 0	—	2 4 0	1 8 0	—	2 0 0

"It will be seen that high prices prevailed in the years 1906 to 1908, the effect of which is so well known that it does not require much recapitulation beyond the remark that the markets in the far East, Ceylon, and the railways in Western India were compelled to turn their attention to Natal and Australia for their coal. The large profits, made by the colliery proprietors in India, did not satisfy them, and they were so expectant of prices going higher and higher that they were reluctant to make forward contracts, which drove their customers, principally railways, to buy far in excess of their actual requirements, although this course meant blocking up of enormous sums of money without interest, but even this they were ready to risk as the fear of the serious consequences of rapid increase in the prices was great. The mills in Ahmedabad, which had been taking Bengal coal, were compelled to use wood from the Godhra and Rutlam forests. Besides, the smaller collieries which were perhaps aware that they would not survive in the long run, and were therefore most anxious to make as much profit as possible to bring quick and large returns on their capital, did not take so much care to keep to the quality of coal they contracted to supply. Thus Bengal coal got a bad name. This is however, not said of respectable miners. Such a condition can never succeed in establishing the prosperity of any trade on a sound basis, nor can it be considered beneficial to the country.

"Even the colliery proprietors, who in their shortsighted policy raised the profits to almost impossible figures, had to suffer in the long run, for the slump in the coal trade, the result of the loss of some of the important foreign markets, and the overstudding of the coal depôts of Indian railways, causing supplies to be in excess of the demand, affected the colliery people seriously towards the end of 1908 and in 1909. Some idea of the rise in the prices at the consuming markets can be formed when it is shown that Bengal coal was available in 1905 in Bombay at prices varying between Rs. 10-0 to Rs. 12-0 per ton, against the price of English coal at Rs. 12-8 to Rs. 18-6 per ton, but during 1907 and 1908 Bengal coal was selling in Bombay at Rs. 16 and Rs. 17 per ton respectively, but at the present moment the prices have come down to Rs. 13-4 to Rs. 13-8 per ton. Now that the time for cheap coal has come, it is to be hoped that the local consumption of coal in India would be greater every year. It has been lately remarked in 'Capital' that if coal were used in the Cantonments where European troops are stationed in India, there would be a saving of some lakhs of rupees to the Government."

Railways have been the chief consumers of Indian coal, and the increase in Railway mileage in India has urged the necessity of working the Indian fields on a larger scale so that supply might compete with demand.

The increased consumption of coal is also due, but to a slight extent, to the industrial activity of India, as the result of improved facilities of transport and of consequent access to new markets.

The average cost of coal in India during the years 1908-1912 was low compared to that of most of the principal coal producing countries of the world, as will be seen below :—

	Per ton	
		d
India	4	8
United Kingdom	8	5¼
Japan	7	8¾
United States	5	10¼
Germany	10	4¼
France	12	7
Australia	7	6

Taking five years, 1909 to 1913, it is found that there has been an increase in the imports, and a smaller increase in the exports as well. A certain portion of the imported coal comes from Africa, as they have an idea of capturing a portion of the Indian market.

Imports and exports of coal.

The following statement taken from Geological Survey Quinquennial Review of the Mineral Production of India gives the imports and exports of coal during the years 1909 to 1913 and other interesting information regarding Indian Coal :—

Year	Imports	Exports
	Tons.	Tons
1909	490,421	563,940
1910	315,996	988,366
1911	318,669	862,177
1912	560,791	898,739
1913	644,934	759,155

"Of the total imports during the years 1909-13, it is found that the United Kingdom sends the largest quantity, Natal coming second, as will be seen from the following statement :—

Year	From United Kingdom.	From Australia	From Natal	From Japan	From other countries	TOTAL
	Tons	Tons	Tons	Tons	Tons.	Tons.
1909 .	311,213	54,792	91,907	11,413	21,096	490,421
1910 . .	261,245	28,040	18,224	6,654	1,833	315,996
1911 . .	245,013	35,703	15,086	6,975	15,862	318,669
1912 .	145,097	92,087	96,076	97,289	130,242	560,791
1913 .	188,034	51,344	136,730	97,208	171,618	644,934

"As regards export of Indian coal, Ceylon and Straits Settlements are the principal customers. During the period 1909-1913, there was an increase of the export of coal to Ceylon as compared to that of the previous quinquennial period, while there was a decrease in the export to the Straits. The following statement shows the exports during 1909-1913 :—

Country.	1909	1910.	1911.	1912	1913
	Tons	Tons	Tons	Tons.	Tons.
Ceylon . . .	313,385	522,019	494,063	579,151	426,206
Straits Settlements . .	128,768	236,933	225,459	149,031	197,433
Sumatra	79,394	100,234	109,383	119,427	102,759
Other countries .	42,393	129,180	33,272	51,130	32,757
TOTAL .	563,940	988,366	862,177	898,739	759,155

Principal coal fields.

"The following was the Origin of Indian Coal raised during the years 1909-1913 :—

Year.	From Gondwana Strata.		From Tertiary Strata.		Total Production.
	Tons	Per cent. of total.	Tons	Per cent. of total	Tons.
1909	11,463,299	96·57	406,765	3·43	11,870,064
1910 . .	11,635,540	96·58	411,873	3·42	12,047,413
1911 . . .	12,329,458	96·96	386,076	3·04	12,715,534
1912 . . .	14,298,083	97·23	408,256	2·77	14,706,339
1913 . .	15,814,304	97·57	393,705	2·43	16,208,009
AVERAGE	13,108,137	97·03	401,335	2·97	13,509,472

"During this period, 1909 to 1913, the percentage of coal from Gondwana Strata rose to 97·57, due to great activity in Bengal and Bihar, and especially to the rapid development of the Jherria coal-field. When the Review of Mineral Production was issued in 1903, the Raniganj field was still the leading field in India, and it maintained its lead up to the year 1905. In 1906, however, Jherria went ahead of Raniganj, and in subsequent years has steadily increased its lead, until it now produces more than half of the total production of India.

"The sub-divisions of the Gondwanas represented on the field are :—

3. Panchets.
2. Damudas :—
    (c) Raniganj stage.
    (b) Ironstone shales.
    (a) Barakar stage.
1. Talchirs.

"There is a general dip to the south and south east throughout the field, and consequently the Talchirs are exposed as a band along the northern margin, succeeded by the younger formations towards the south. As the beds dipping to the south east are overlapped by the alluvium of the Damuda Valley, the distance to which the coal-bearing rocks extend in this direction towards Burdwan and Calcutta is unknown. In order to test the field in this direction a boring was put down by the East Indian Railway Company in the years 1903 to 1906 at Durgapur, 16 miles south-east of Raniganj, but to the depth of just 3,000 feet the only rocks penetrated were those of the Panchet series and perhaps upper part of the Raniganj stage. At this point, therefore, the coal-seams are buried to a greater depth than 3,000 feet. As the Damuda river stretches away to the south-east in an almost straight line for a distance of about 45 miles beyond the Raniganj field and thus runs approximately parallel to some great faults within the field, it is possible that its alignment is determined by a great dip-fault, and the Gondwana strata possibly continue along the left bank of the river far beyond the visible limits of the field. Although the Durgapur boring shows that the coal-seams are at that point more than 3,000 feet below the surface, it is quite possible that the depressing effects of the general south-easterly dip may be neutralised by strike faults. Whether the coal measures are brought up in this way to within workable distance of the surface in the south-east direction, or whether they are now hopelessly beyond reach (if they ever were developed in this area), can only be determined by trial borings to the south-east of Durgapur. So long as there are abundant supplies nearer the surface in the Raniganj and Jherria fields, it will be to no one's financial advantage to risk the money required to test this interesting question.

"The information at present available for publication regarding the quality of the coal being worked in the Raniganj field is comparatively limited, for the correlation of the various seams being worked in the different collieries is still doubtful. We are indebted to Dr. W. Saise for a series of assays published in 1901. These show the following extremes and averages :—

Assays of Coal from the Raniganj Fields (W. Saise).

		Moisture.	Ash.	Volatile Matter.	Fixed Carbon.
Raniganj (Upper Seams).	Highest	9·05	22·67	38·53	60·50
	Lowest . .	1·60	8·00	26·40	32·40
	Average of 11 assays	6·86	14·93	32·22	45·99
Raniganj (Lower Seams).	Highest .	6·20	22·50	38·25	61·00
	Lowest .	1·06	8·84	27·00	46·00
	Average of 28 assays	3·81	13·54	31·40	51·25
Barakar Seams	Highest . .	1·50	25·00	29·25	61·00
	Lowest . .	0·50	11·00	23·75	49·00
	Average of 8 assays.	1·00	17·00	26·75	55·25

Jherria field.

"In the Jherria field the only Gondwana formations preserved are the Talchirs and the three divisions of the Damuda series—the Barakar Ironstone shales, and Raniganj. The Barakars are by far the most important to the coal miner, and no attempts were made to work the thinner and poorer seams of the Raniganj series until the 'boom' of 1906-08 led to the opening up of every tolerable seam of coal within range of the two railway systems that serve the field.

"During 1903 a number of coal samples from the Barakar seams was taken by Messrs. E. P. Martin and H. Louis at the working faces in some leading mines in this field. The average of fifteen assays made on these samples was as follows :—

Fixed carbon	63·50
Volatile matter	21·31
Ash	14·29
Moisture . .	0·90

"Ten of these were tested for sulphur and were found to contain on an average 0·57 per cent., while the same ten samples showed an average evaporative power of 12·82 lbs. of water per lb. of coal.

"Subsequently in 1909 assays made by Lieutenant-Colonel F. Cunningham Hughes gave similar results ; these are summarised below :—

—	Moisture per cent.	Volatile matter per cent.	Fixed carbon per cent.	Ash per cent.	Calorific value (in calories).
Raniganj or Upper Measures (2 samples.)	1·68	30·61	57·26	10·45	7,195
Barakar or Lower Measures (22 samples.)	1·25	23·21	63·77	11·78	7,197

"The Jherria field, like those of Raniganj and Giridih, is traversed by trap-dykes, the most destructive being a peculiar form of mica-peridotite which spreads out as sheets in the coal seams destroying large quantities of valuable coal. The seams known as Nos. 14 and 15, which otherwise include a high quality of coal, are especially damaged by trap intrusions in the centre and east of the field.

Bokaro and Ramgarh fields.

"Immediately west of Jherria on the other side of the Jamunea river lies the western termination of the Jherria field, now some times known as the Bokaro-Jherria field. This is being developed by a few

Companies and will be served by a short branch line taking off from the Bokaro extension of the Bengal Nagpur Railway. West of this again lies the Bokaro field, to develop which the Bokaro Ramgarh Colliery Company was formed a few years ago after obtaining mineral concessions from the Rajah of Padma. A portion of this field is already being developed as a joint colliery between the East Indian and the Bengal Nagpur Railways, and the joint railway line owned by these two Companies has recently been opened for traffic up to it. The lay out of the colliery is in progress and the machinery is now being delivered from England. The coal is of good quality, equal to first class Jherria coal. The small field known as the Ramgarh field lies from 15 to 20 miles south-west of the Bokaro field. It is traversed by the Damuda river in the bed of which the coal crops out in numerous places. But the coal is not considered, at present sufficiently attractive for development.

Bye-products recovery.

"In the last Review (page 30) reference was made to the erection of bye-product recovery ovens on the Giridih field. Two batteries, one of eighteen, the other of twelve, ovens of the Simon-Carves type are now installed. The products recovered are tar and ammonia, the latter being converted into ammonium sulphate. The two ovens are said to be capable of producing 40,000 tons of coke annually. The production of sulphate is about 350 to 400 tons per annum.

Other fields.

"The other principal coal fields being worked in the Peninsula are Mohpani, the Pench Valley, and Ballarpur in the Central Provinces, Umaria in the Rewah State, and Singareni in the Nizam's Dominions. Of these Ballarpur has been opened up during the period of the present Review to take the place of the Warora colliery, which was closed down in 1906.

Ballarpur

"In anticipation of the failure of Warora prospecting operations were undertaken by Government at Ballarpur, 38 miles to the south-south-east in the Chanda district, on the left bank of the Wardha river. Coal was proved by borings over an area of 1½ square miles and a shaft was commenced. The large quantities of water met with in sinking proved to be a formidable obstacle, as all fuel used for the pumping engines had to be carried by road from Warora. Ballarpur was joined to the Great Indian Peninsula system by an extension of the Wardha-Warora branch, which was opened for traffic on the 1st February 1908. Meanwhile two 14-foot circular shafts had been sunk to the coal at depths of 257 feet (No. 1) and 236 feet (No. 2), and in 1906 a small quantity of coal was raised for use on the railway construction works. One of the shafts is lined with brick and ferro-concrete, and the other with fire-bricks moulded to the circle of the shaft.

"The seam is 50 feet thick, including thin partings of shale; but the only part at present being worked is an 8-foot layer in the middle of the seam. The workings are on the bord-and-pillar system, the pillars left being 60 feet square. The output between 1900 and 1912 was between 200 and 300 tons a day.

Pench Valley.

"In the year 1913 the output of the Pench Valley coalfield was 89,905 tons. The output of coal from this field, however, has hitherto, been limited by (1) the trade obtaining in the districts served by the Bengal Nagpur Railway, (2) the carrying capacity of the same railway or rather of that branch of it serving the coalfield. Three collieries have been opened by the Pench Valley Coal Company, Limited :—(1) Chandametta, (2) Barkui, (3) Buteria.

"At Chandametta one incline fitted with direct haulage was opened and has been worked out as far as was deemed advisable; the pillars have been worked back and are now exhausted, with the exception of about 3,000 tons still to get. It is estimated that 93 per cent. of the coal of this area has been won. A barrier has been left between the above workings and a shaft 15 feet in diameter sunk well to the dip, forming a new colliery, which is named Wallace Pit Colliery. It is to be served by the Great Indian Peninsula Railway, which is now laid through the coalfields, and is expected to carry coal about October 1915.

"At Barkui one incline was opened and worked up to a certain point. It was then considered that, by reason of danger from flooding from the river which ran past the mouth of the incline and for other reasons, the pillars should be worked out, and a strong barrier left, and a new colliery opened out to the dip. Two inclines have been opened out therefore to the dip of the barrier, which is 300 feet wide.

"Collieries are being opened out at Parasia for the Central Pench Coal Company, Limited, at Jatachpar for the Upper Pench Coal Company, Limited, at Bhajipani and Eklahra for the Pench River Coal Company, Limited. All the above collieries are served by the Great Indian Peninsula Railway and are expected to be loading coal for that railway to carry by October 1915.

"The Siskol coal-cutters formerly used in this field have been abandoned as the coal eventually proved too hard, and shot holes are now drilled by means of ratchet drills of the Conqueror type.

"The average number of persons employed daily during the years 1909 to 1913 was 761; this, with 12 deaths, gives a death rate of 3·15 per 1,000. The annual labour figures are :—

	Persons.
1909	937
1910	765
1911	470
1912	802
1913	832

"The diamond boring operations at Nimji and Bazargaon, 16 miles to the west of Nagpur, were carried to a depth of 900 feet and abandoned, as no coal was found

Mohpani.

"The oldest colliery in the Central Provinces is Mohpani. The Mohpani coalfield is situated in the Narsinghpur district on the south side of the Nerbudda alluvial valley, and at the foot of the northern spurs of the Satpuras. The divisions of the Gondwana system exposed in this field are the Mahadevas, the Barakars, and the Talchirs, the known coal-seams lying, as usual in the Barakars. About forty years ago, the Sitariva Coal Company carried out a certain amount of work on the field, but the actual development of the Mohpani coalfield is due to the efforts of the Nerbudda Coal and Iron Company, Limited, which commenced operations in 1862, and, from then until 1901, spent more than £150,000 on the undertaking. The mines are divided into the old field and the new field. The old field was abandoned in 1902 after practically the whole of the coal workable to the existing shafts had been won, the total amount so extracted being 150,815 tons, the deepest shaft being the Helen pit, 405 feet deep, and the number of coal seams four.

"The new field, forming part of a second concession adjoining the old field, was first opened up in 1892, and up to the end of 1903 the Company had raised 181,080 tons of coal and splint from the two upper coal seams. As in the old workings on the Sitariva river, faulting and heavy water discharge were, in 1903, giving considerable trouble; so that, in order satisfactorily to work out the already proved coal, additional capital was necessary for hauling and pumping plant. This capital the shareholders of the Nerbudda Coal and Iron Company were unwilling to supply. On the other hand, the Great Indian Peninsula Railway Company, to whose system the mines are connected by a ten mile branch line to Gadarwada, and who had been taking the output of the Mohpani Collieries at a uniform rate of Rs. 6 a ton, was dissatisfied with the small output; consequently, after a report by Mr. R. R. Simpson of the Geological Survey of India, the properties were sold to the Great Indian Peninsula Railway Company for £40,000 with effect from the 1st July 1904. The results of the change are seen in the rapidly increasing output of this colliery, which sunk as low as 26,618 tons in 1904 and 22,998 in 1905, but has been, on the average, over 50,000 tons in recent years.

" Amount of coal raised in the British Empire in 1910 and 1911—

Countries.	1910 Tons of coal raised.	1911. Tons of coal raised.
United Kingdom	264,433,028	271,891,899
Australia	9,676,549	10,493,060
Canada	11,327,771	10,019,166
Cape Colony	87,551	79,485
Natal	2,294,746	2,392,456
New Zealand	2,197,362	2,066,073
Orange River	474 742	430,973
Transvaal	3,548,550	3,878,286
Total British Empire except India	294,040,299	301,251,398
India	12,047,413	12,715,534
TOTAL BRITISH EMPIRE	306,287,712	313,966,932

The following statement shows the quantity of coal carried year by year both on Public and Departmental account from the Coal Fields served by the East Indian Railway from 1906 to 1916-17 inclusive, and from those served by the Bengal Nagpur from 1909 to 1916-17 :—

Year.	From East Indian Railway collieries	From Bengal Nagpur Railway collieries.	Coal output in millions of Tons.
	Tons	Tons	
1906	6,800,585		8½
1907	7,308,607	.	10
1908	8,320,104	..	11½
1909	7,290,539	1,728,633	10½
1910	8 337,295	1,968,550	10¾
1911	8,119,031	2,506,304	11½
1912	9,600,399	2,689,095	13½
1913	10,205,854	3,277,650	14⅘
1914	10,263,967	2,797,842	15
1915	10,335,300	2,510,481	15⅜
1916-17	11,825,069	2,997,688	15⅛

Reduction in Coal Rates.

Now to deal with the coal rates. The Government had for quite a long time been in correspondence with the East Indian Railway regarding reduction of rates for coal, especially having regard to the high cost of fuel on State lines; and it was accepted by the East Indian Railway in 1891 that the rates should be reduced and the following scale of rates, chargeable on through distance over all the railways concerned, was accepted by the East Indian Railway and the State lines, and other railways were moved to accept the revised rates :—

	Per maund per mile.
(i) Coal, coke and patent fuel –	
(a) For consignments of less than 3,000 maunds –	pies
For all distances up to 400 miles inclusive . . .	0·165
For distances over 400 miles—	
For first 400 miles	165
For the distance in excess of 400 miles . . .	11
(b) For consignments of 3,000 maunds and over –	
For all distances up to 400 miles inclusive . . .	15
For distances over 400 miles –	
For first 400 miles	15
For the distance in excess of 400 miles . . .	10

(c) Rebate on simple consignments.—The charges under (i) (b) were subject to rebate in the case of a consignment exceeding 50,000 maunds made at one time on account of any one railway for delivery at one place. A rebate was given at the rate of 2½ per cent. on the quantity in excess of 50,000 maunds up to and including 2,00,000 maunds. Thus on a consignment of 2,00,000 maunds a refund was given of the freight on 2½ per cent. of 1,50,000 maunds, or the freight paid for 3,750 maunds. In the case of consignments exceeding 2,00,000 maunds, rebates will be given as follows :—

On quantities in excess of 2,00,000 maunds up to 4,00,000 maunds	7 per cent
On quantities in excess of 4,00,000 maunds up to 6,00,000 maunds	7½ ,,
On quantities in excess of 6,00,000 maunds up to 8,00,000 maunds	10 ,,
On quantities in excess of 8,00,000 maunds . .	15 ,,

(d) Rebate on aggregate of consignments.—At the end of any half year a railway administration whose aggregate consignments to one station during the half year exceeded 50,000 maunds were entitled similarly to claim a refund in respect of the payments made in accordance with the following scale. If, however, the claim is not made within two months after the expiry of the half year, it will be admitted :—

					Quantity on which refund is claimable. Per cent.
On quantity in excess of		50,000	up to	2,00,000 .	2½
,,	,,	2,00,000	,,	4,00,000 .	5
,,	,,	4,00,000	,,	6,00,000 .	7½
,,	,,	6,00,000	,,	8,00,000 .	10
,,	,,	8,00,000	,,	. . .	15

EXAMPLE.

Consignments		Rebate		
		Rate	Quantity on which calculated	Amount.
	Maunds	Per cent	Maunds	Maunds
1st . .	10,000			
2nd .	1,20,000	2½	70,000	1,750
3rd . .	5,00,000	7½	1,00,000	7,500
		5	2,00,000	10,000
		2½	1,50,000	3,750
TOTAL .				23,000
Total quantity.	6,60,000	10	60,000	6,000
		7½	2,00,000	15,000
		5	2,00,000	10,000
		2½	1,50,000	3,750
		TOTAL .		34,750
Deduct amount on which rebate has already been allowed as above				23,000
Quantity for refund at the average rate charged				11,750

Before making this refund, any rebate made under (i) (c) was first deducted.

(e) The rebates under (i) (c) and (d) on 14,25,000 maunds and on all larger quantities was limited to 10 per cent. on the total quantity carried.

(f) The charge under (i) (a) and (b) was made on the full carrying capacity of the wagons employed.

Before long the above scale was in force on the East Indian Railway on all the State lines, and also on the Indian Midland, the Bengal Nagpur, the Bengal and North-Western and the Rohilkhund and Kumaon Railways.

In May 1895 the Government of India revised the coal rates again. The Schedule of 1891, and the reduced rates for large quantities were made generally applicable. Formerly there were two scales, one for consignments of less than 300 maunds and the other for consignments over 300 maunds with effect from 1st February 1895, the lower-scale of rate, applicable however to quantities of more than 300 maunds, was introduced for consignments in full wagon loads so that any station despatching even one wagon load had the advantage of the lowest rate as follows :—

For all distances up to 400 miles .	18 pie per maund per mile.
For distances above 400 miles . .	For the 1st 400 miles ·15 pie per maund per mile. For distances in excess of 400 miles ·10 pie per maund per mile

In addition, the rebates formerly allowed were continued.

It was intended that there were to be the maximum scale of rates, but this was not made quite clear. It was laid down that the rates between two points were to be calculated at the above scale by the shortest route. But if traffic was carried by a longer route it could be done by charging the rate by the shortest route without the consent of the railways forming the longer route. But if any railway, which formed part of the shortest route, also carried the traffic when it followed the longer route, such railway could, if it liked, claim in division the same mileage rate as it would get if the traffic was booked by the shortest route. But railways that formed the longer route, did not form any portion of the shortest route, would not get more than the mileage division of the rate.

In order to meet cases of railways which did not accept the above Schedule of rates, such as the Great Indian Peninsula and Madras Railways, on whom the Government could not yet impose the schedule under the contracts, the following clause was provided :—

"When the traffic is booked over railways whose administrations have not accepted the schedule, the through rates with such railways shall be the sum of local rates."

But subsequently a dispute arose as to the interpretation of this last clause. While it was intended that the clause should apply to railways that did not accept the schedule, it was never the intention that if any railway that had accepted the schedule, quoted a rate within the schedule, but not lower than the minimum of $\frac{1}{10}$th pie per maund per mile, the other railways should apply, in through booking with such a railway, their local charges up to the junction.

The question of the entrance of the Bengal Nagpur Railway into the Jherria coal fields by a branch line from Midnapur to Jherria, and of an independent route from Calcutta to Northern India had been engaging the attention of the Government and of the Calcutta merchants for a long time especially in view of the congestions that were taking place on the East Indian Railway. A committee was appointed in 1900 to investigate the following points :—

(1) The entrance of the Bengal Nagpur Railway into Jherria.
(2) The relief of the congestion of traffic on the East Indian Railway.
(3) The provision of an independent access to Calcutta from the United Provinces of Agra and Oudh.

It was accepted as the result of the enquiry by the committee and after hearing the evidence of the mercantile and railway bodies interested in the question, that the Bengal Nagpur Railway should have free and independent access into the Jherria coal fields, on equal terms with the East Indian Railway by the construction of their branch from Midnapur to Jherria.

It was proposed that the East Indian Railway should have their Grand Chord Line from the north-east to the north-west running north of the field, and that the Bengal Nagpur Railway line from Midnapur to connect both the Grand Chord, should run from the south-east to the

south-west, running south of the field, and that no line should run through the centre of the field as was proposed by the East Indian Railway.

The East Indian Railway were to construct, own and work a loop line (to be known as the outer loop) from Pathardihi to Khanodih, including the Dhanbaid-Jherria Chord, and the Bengal Nagpur Railway were to build the line from Bhoojodih junction to Mhoda and to work and own it and this was to be known as the inner loop.

Subsequently connections were formed between these two loops by short links so that every colliery in the field, whether situated on the Bengal Nagpur Railway or on the East Indian Railway, could call for and be supplied with wagons of whichever Railway Company (Bengal Nagpur Railway or East Indian Railway) it desired to send the coal by, *i.e.*, a colliery on the Bengal Nagpur Railway desiring to send traffic by the East Indian Railway could indent for and obtain for loading wagons of the East Indian Railway, and *vice versâ*.

This arrangement was alright, but at the time it was not anticipated that after the Bengal Nagpur Railway got entrance into the field they would for some time be debarred from carrying the export coal traffic to Calcutta because of their rate on the longer distance *viâ* Midnapur, falling below the minimum when effecting equalization with the rate by the shorter route of the East Indian Railway.*

The entrance of the Bengal Nagpur Railway, into the Jherria coal fields did not at once give the coal trade of Calcutta that advantage in respect of the export coal trade which was expected.

The distances from the Jherria coal fields to Calcutta compare as follows :—

From East Indian Railway coal invoicing stations in the Jherria-field to Howrah (or Kheddorpore Docks. The Howrah distance is applied to Dock traffic) *viâ* Dhanbaid chord.		From the Bengal Nagpur Railway coal invoicing stations in the Jherria field to Shalimar.	
	Miles.		Miles.
Jherria . . .	173	Bhaga . . .	202
Kasunda . . .	171	Malkera. . .	211
Dhanbaid . . .	169	Mohuda . . .	209
Katrasgarh . . .	177	Bhojoodih . . .	195
Pathardihi . .	181		

The East Indian Railway had already quoted their rate for export coal on the minimum of $\frac{1}{10}$th pie per maund per mile, which prevented the Bengal Nagpur Railway giving the same facilities in the matter of Railway freight to the Calcutta traders.

The Bengal Nagpur Railway had at first equalised with the East Indian Railway rate by going below the minimum, but on the East Indian Railway bringing this to the notice of the Government, the Bengal Nagpur Railway, were prevented from doing so, with the result that while there were complaints of short supplies of wagons to collieries of the East Indian Railway the Bengal Nagpur Railway new line was

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* The reduced rates of the East Indian Railway introduced in 1902 are given on page 123.

not doing much traffic. But it was not very long after that the two lines came to an arrangement under which equal facilities for the export trade to the Kidderpore Docks from the Jherria coal fields were allowed by both the routes. It was accepted that the freight on coal by both railways from all stations in the Jherria coal field to Howrah, Shalimar, Kidderpore Docks, Bracebridge Hall and other Calcutta stations should be equalised, and that the chargeable distance by both railways should be 170 miles irrespective of the actual distance. It was also accepted that in the case of collieries on the East Indian Railway in the Jherria field, desiring to send coal to Calcutta *viâ* the Bengal Nagpur Railway, the East Indian Railway would call upon the Bengal Nagpur Railway for supply of wagons, and that in the case of such despatches, while there would be no extra freight chargeable to the public, the Bengal Nagpur Railway would, out of their proportion, pay to the East Indian Railway freight for 20 miles, and exactly similar arrangements were also agreed to in the case of despatches from collieries on the Bengal Nagpur Railway to Calcutta in East Indian Railway wagons and by the East Indian Railway route.

The Government of India and the East Indian Railway had been for 2 or 3 years considering the advisibility of making a still further and more liberal reduction in the rates for coal, the object aimed at being to place coal at a cheaper price within the reach of the industries of the various provinces in India situated at great distances from the coal fields. But this could not be done unless the minimum for coal traffic for long distances was reduced. Therefore, with effect from the 1st September 1905 the following minimum rates were introduced subject to the undernoted conditions :—

	Per maund per mile.
"For distances up to 300 miles . . .	$\frac{1}{10}$th pie or 0·10
Plus for any distance in excess of 300 miles and up to 500 miles inclusive . . .	$\frac{1}{15}$th pie or 0·066
Plus for any distance in excess of 500 miles .	$\frac{1}{20}$th pie or 0·05

"*Condition 1.*—That the rate shall be calculated on the through distance between the station of origin and the station of destination of the consignment.

"*Condition 2.*—That when there are two or more routes to destination from the colliery where the traffic originates the railway or railways forming the longer route may calculate charges on the same mileage as the railway or railways forming the shorter route.

"*Condition 3.*—The coal for the use of foreign railways is to be charged at the same rates and under the same conditions as coal carried for the public.

"*Condition 4.*—That the rates charged are divided between the railways over which the traffic is carried in proportion to the mileage of each, provided that if the distance the coal is carried over any railway is less than 25 miles, the mileage of that railway in dividing the freight shall be reckoned as 25 miles.

"*Condition 5.*—That these rates shall be subject to revision at the end of three years from the 1st of September 1905."

It is to be observed that these rates were minima rates and were therefore permissive and not obligatory, although it was felt that the railways should at once go down to the minimum rates. Almost simultaneously with the sanction of the rates above referred to for coal the East Indian Railway Board of Directors proposed for introduction on their lines the following scale for coal traffic :—

East Indian Railway proposed—

	Per maund per mile.
	pie.
Up to distances of 75 miles	0·14
Plus for distances 76 to 200 miles	0·12
Plus ,, ,, 201 to 450 miles	0·10
Plus ,, ,, over 450 miles	0·05

Taking the following places (Cawnpore, Agra, Delhi, Nagpur and Bombay), the rates then (in 1905) in force from the Jherria coal field compared as under with those proposed by the East Indian Railway and the minimum rates sanctioned by the Government—

Stations.	Existing rates			East Indian Railway proposal.			Railway Board's proposal.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Cawnpore	7	7	3	7	5	0	5	14	6
Agra	9	6	9	8	7	0	7	0	6
Delhi	10	13	3	9	2	3	7	14	0
Nagpur	9	6	9	8	7	0	7	0	6
Bombay	16	5	0	12	1	6	10	11	0

However, the reduction in rates did not actually come into operation generally over India till about a year later, *viz.*, November 1906, because in the first place the coal carrying railways, *viz.*, the Bengal Nagpur Railway, and East Indian Railway, which would have to supply wagons for this traffic, were not prepared with the extra rolling stock; and secondly, the East Indian Railway Board of Directors decided that as the opening of the Grand Chord Line in 1906 would affect the distances between the coal districts and all places north and west of Moghalserai by reduction in the mileage to the extent of 50 miles, it was thought advisable to bring about the reduction on and from the same date as the rates for other commodities, lowered to the extent of the reduction in mileage, came into force along with the lower passenger fares for the same reason.

The following was the revised scales of rates for coal introduced in November 1906 :—

Consignments in full wagon loads—

	Per maund per mile. pie.
For all distances up to 75 miles inclusive .	0·14
Plus for any distance in excess of 75 miles up to 200 miles inclusive	0·12
Plus for any distance in excess of 200 miles and up to 500 miles	0·06
Plus for any distance in excess of 500 miles	0·05

Hence we find that during the years 1901-1907 there were two reductions in the coal rates, the first one in August 1902 and the next in November 1906. The rates from the Jherria coal fields to the following place in 1901, 1902, and 1907 were as under* :—

—	1901. Per ton			1902. Per ton.			1907. Per ton.		
	Rs	A	P	Rs.	A.	P.	Rs.	A.	P.
Patna	4	15	0	4	2	0	3	9	0
Benares	8	1	0	6	2	0	4	2	0
Cawnpore	11	1	0	8	15	0	5	15	0
Delhi	14	14	0	12	5	0	7	15	0
Lahore	19	5	0	16	9	0	9	13	0
Bombay	21	4	0	21	7	0	11	4	0
Karachi	27	13	0	25	2	0	12	10	0

The rates to Lahore, Bombay and Karachi from the Jherria coal field in 1907 were reduced by 41, 48 and 50 per cent. respectively from the rates in force in 1902.

The remarks on "Ledu Valley and Assam Coal, will be found in Appendix (I).

There have been some enhancements in the coal rates since the war, notes on which are given below :—

Slight enhancements in coal rates in 1916.

At the meeting held at Kingsway in Delhi on the 14th February 1916 at which were present the Hon'ble Member in the Railway Department, the President and the Members of the Railway Board, and the Agents of the East Indian, Great Indian Peninsula, Bombay, Borada and Central India and Bengal-Nagpur Railways, the following decision was arrived at :—

With effect from the 1st September 1916 the through rate from the coal-fields to Bombay were to be Rs. 12-2-0 per ton of which the Great

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* **For full particulars relating to routing and division of traffic in Bengal coal to various parts of India, see pages 159 to 162.**

Indian Peninsula Railway would receive on each of the following routes the amount shown against each :—

	Rs.	A.	P.
Viâ Jubbulpore	6	12	10
„ Katni	7	12	7
„ Cawnpore	8	4	5
„ Nagpur	5	15	8

which figures include the Port Trust 2 pies terminal and the Ghat charge.

The Bombay, Baroda and Central India Railway would receive for traffic sent *viâ* Agra Rs. 7-2-1 which figure includes the 2 pies Port Trust terminal, the East Indian or Bengal-Nagpur Railway retaining the balance.

Local rates were to be adjusted where necessary to prevent rebooking.

This rate included a charge of 2 annas per ton to be levied by the East Indian and Bengal-Nagpur Railways for terminal services in the coal-fields. The charge of 2 annas was made on all coal traffic in the Bengal coal-fields with effect from the same date, 1st September 1916. But in the case of traffic to Madras Railway stations the charge was more than 2 annas per maund. The extra charges in this case were as follows :—

	Per ton. Rs.	 A.	 P.
Over Bengal-Nagpur Railway	0	4	0
Over Madras and Southern Mahratta Railway :—			
For distances up to 100 miles from Waltair	0	1	0
For distances over 100 miles but not exceeding 200 miles	0	2	0
For distances above 200 miles but not exceeding 300 miles	0	3	0
For distances exceeding 300 miles	0	4	0

With effect from the 1st October 1916 the rebate on shipment for Indian ports excluding Burma was abolished.

These increases were approximately as follows :—

	Annas per ton.
(1) To Bombay	14
(2) To Madras	8
(3) On export coal	10
(4) Other destinations	2

The following were the figures of output of coal in British India during 1916 —

	Tons.
Bengal	4,992,376
Behar and Orissa	10,762,222
Punjab	47,446
Assam	286,965
Baluchistan	42,163
Central Provinces	287,832
North-West Frontier Province	75
TOTAL	16,419,682

The upward and downward despatches of coal over the East Indian and the Bengal-Nagpur Railways were as follows during the years 1915 and 1916:—

UPWARD DESPATCHES.				DOWNWARD DESPATCHES.			
East Indian Railway.		Bengal-Nagpur Railway.		East Indian Railway.		Bengal-Nagpur Railway.	
1915.	1916.	1915.	1916	1915.	1916.	1915.	1916.
Tons.	Tons.	Tons.	Tons	Tons	Tons	Tons.	Tons.
5,845,143	4,416,050	2,230,598	1,716,137	4,887,667	5,509,814	1,504,244	1,622,451

Output of Bengal coal.

The output of Bengal coal from 1910 to 1915 was as follows:—

——		1910.	1911.	1912.	1913.	1914.	1915.
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Hazaribagh .	Bokaro-Ramgarh.	2,166	468	5,310	3,319	7,900	4,333
	Giridih . .	670,304	704,443	730,530	806,810	825,026	872,647
	Jharia . .	82	55	110	2,087	21,646	63,570
Manbhum .	Jharia . .	5,704,534	6,373,673	7,655,342	8,606,223	9,125 007	9,077,221
	Raniganje .	473,332	451,273	635,764	674,864	519,371	507,077
Sonthal Parganas.	Raniganje .	1,952	2,109	2,375	2,532	2,384	2,059
	Rajmahal .	2,788	1,978	2,775	3,572	7,150	39,830*
Palamau, Daltonganj . .		84,996	70,662	71,917	85,345	81,680	85,785
Sambalpur, Hingir Rampur .		830	5,669	21,314	42,805	60,883	58,825
Bankura-Raniganje . .		4,098	7,057	7,534	5,225	6,702	5,197
Birbhum		1,664	1,258	1,728	2,461	2,023	1,944
Burdwan		3,731,560	3,850,259	4,296,867	4,642,166	4,416,815	4,968,319
Darjeeling		..	..	..	133	..	..
TOTAL .		10,777,306	11,468,904	13,429,566	14,877,542	15,075,587	15,686,816

* Figure shown for Jainty.

and the average prices of Bengal coal *f. o. r.* at mines were as shown below from 1899 to 1915 :—

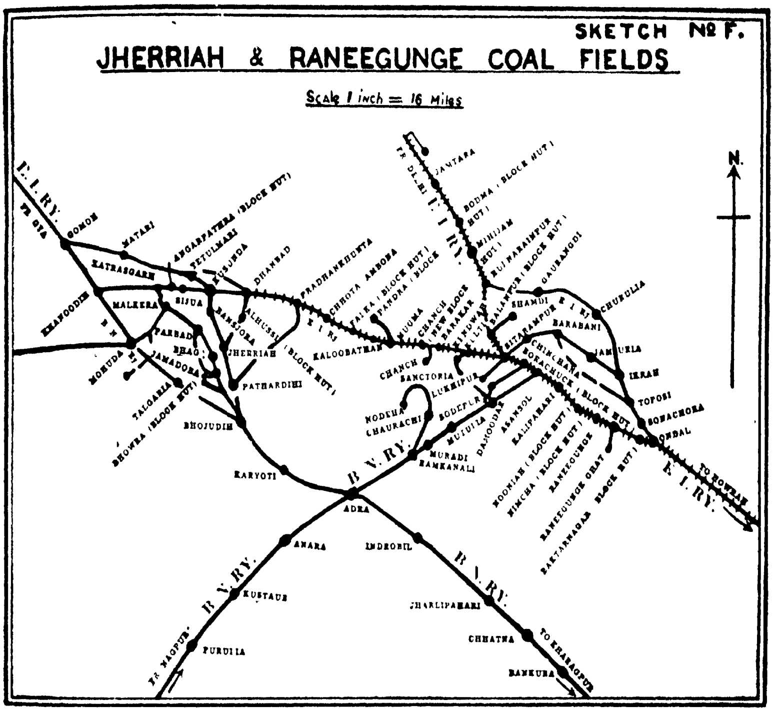
	Per ton.		
	Rs.	A.	P.
1899	4	0	0
1900	4	1	0
1901	3	12	0
1902	3	7	6
1903	3	7	0
1904	3	8	0
1905	3	8	0
1906	4	10	0
1907	6	4	0
1908	6	12	0
1909	4	4	0
1910	4	9	7
1911	3	12	0
1912	6	3	7
1913	6	8	0
1914	7	5	0
1915	5	1	0

A statement is appended below of production and consumption of coal in India (in Tons) from the years 1907 to 1915 :—

Comparative Statement of Production and Consumption of Coal in India (in Tons).

Years.	Production.	Imports of Foreign Coal excluding re-exports	Available supply of foreign and Indian Coal.	Exports of Indian Coal.	Consumption of Coal in various industries
1907	11,147,339	301,539	11,448,878	658,145	10,277,000
1908	12,769,635	384,286	13,153,921	659,596	12,654,000
1909	11,870,064	490,421	12,360,485	563,940	11,797,000
1910	12,047,413	315,987	12,363,400	988,366	11,375,000
1911	12,715,534	318,462	13,033,996	862,177	12,172,000
1912	14,706,339	560,534	15,266,873	898,739	14,368,000
1913	16,208,009	644,879	16,852,888	759,155	16,094,000
1914	16,464,263	418,741	16,883,004	579,746	16,303,000
1915	17,103,932	190,591	17,294,523	753,042	16,541,000

A sketch map of the Bengal coal-fields is appended below :—



SKETCH No F.

JHERRIAH & RANEEGUNGE COAL FIELDS

Scale 1 inch = 16 Miles

CHAPTER XIII.

COTTON.

As an introduction to chapter on cotton the following remarks from the report on " Enquiry into the Rise of Prices in India ", published in 1915, will be found interesting :—

General Remarks on Cotton trade of India.

" India produces roughly about one-eighth of the world's requirements of cotton. The manufactures of the Indian mills are chiefly confined to the coarser kinds of yarn and piece goods, while India consumes a large quantity of cotton manufactures of finer qualities imported from abroad mainly the produce of Lancashire. India also exports a large quantity of both raw material and cotton manufactures to other countries. China is its chief customer in regard to yarns, while Ceylon, the Straits, Aden and East Africa consume the larger share of its manufactured piece goods available for export. The fluctuations in the price of cotton thus depend partly on the relative abundance or scarcity of the yield in India and partly on the demand from other countries, which, again, is largely influenced by the crop in the other cotton-growing countries of the world, chiefly the United States, Egypt and China. The demand for Indian cotton has been largely influenced by changes in the course of the trade in Indian cotton during the period under enquiry. Prior to the period under enquiry, England was the country which took most of the Indian cotton, not so much for local manufacture, for the competition of the Indian mills had already materially reduced the spinnings and weavings for which this short staple cotton was required, as for distribution over the continent of Europe, where the coarser kinds of cotton goods are still made for the use of the peasantry and the artisans. Gradually, the shipments to England declined, as direct communication was established with the consumers of the continent. Then Japan entered the market and, in consequence of the exceptional development of her spinning industry, speedily became a much larger consumer than any other country. As the Japanese mills increased their spinning capacity, the demand in England for short staple cotton continued to decline, Japanese yarn and cloth of the coarser kinds gradually ousting English yarn and cloth of the same class in the markets of the Far East. Another reason for the contraction of the demand in Europe was the growth of the production of cotton in the United States, where an abundance of the supply so effectively reduced the price of the fibre as to make the use of that cotton economical in comparison with Indian cotton."

" The following statement shows the world's production of cotton from 1900 to 1910. Statistics of the outturn of previous years for the other countries are not available.

World's cotton crops.

" *World's Cotton Crop from 1900 to 1910 (in thousands of bales).*

Year.	United States of America.	India (*a*)	Egypt.	China.	Asiatic Russia.	Brazil.	Mexico.	Other countries.	GRAND TOTAL.
1900 . .	10,123	1,810	1,125	1,192	633	209	101	249	15,442
1901 . .	9,510	1,711	1,320	1,200	482	210	103	330	14,866
1902 . .	10,631	2,069	1,210	1,200	426	305	104	317	16,262
1903 . .	9,851	2,029	1,349	1,200	529	285	169	323	15,735
1904 . .	13,439	2,322	1,305	1,200	504	220	253	357	19,600
Average .	10,711	1,988	1,262	1,198	515	246	146	315	16,381
1905 . .	10,577	2,036	1,231	1,200	539	270	227	377	16,457
1906 . .	13,274	2,649	1,428	1,200	688	365	270	397	20,271
1907 . .	11,108	1,795	1,486	1,200	549	348	70	409	17,025
1908 . .	13,242	2,210	1,398	1,200	546	231	140	567	19,534
1909 . .	10,005	2,633	1,000	1,200	543	277	90	640	16,388
Average .	11,641	2,265	1,309	1,200	573	298	159	490	17,935
1910 . .	11,609	2,338	1,571	1,200	688	270	200	580	18,456

"

(*a*) Years represent official years.

India's cotton crops.

The acreage and outturn of cotton for the year 1910-11 of the different provinces of India were as given below :—This was on the average a good year for the cotton crop.

Provinces.	Area under cultivation.	Outturn.
	Acres.	Maunds.
Assam	10,000	5,000
Bengal	11,000	13,000
Chota Nagpur	16,000	25,000
Behar	38,000	49,000
Agra Provinces, East	5,000	5,000
Bundelkhand	122,000	1,25,000
Agra Provinces, North and West, including Oudh . .	1,205,000	17,57,000
Panjab, East	926,000	14,09,000
„ West	133,000	1,75,000
Sind	274,000	8,58,000
Gujarat	904,000	12,69,000
Deccan	3,483,000	28,21,000
Berar	3,188,000	28,77,000
Central Provinces	1,297,000	14,87,000
Madras	2,321,000	13,32,000
TOTAL .	13,933,000	1,42,07,000

Exports of raw cotton.

The exports of cotton from India *viâ* the different ports were as under during 1911 :—

	Cwts.
Calcutta	256,447
Bombay	6,188,889
Karachi	1,208,881
Madras	971,981
Burma	60,202
Cwts.	8,686,400

or 1,17,26,640 maunds

and out of this the quantities principally exported to different countries were as shown below :—

	Cwts.
United Kingdom	567,916
Hongkong	91,850
Japan	2,852,453
Germany	1,391,357

It will thus be seen that out of total production of 1,42,07,000 maunds, 1,17,26,640 maunds were for export, and therefore 24,80,360 maunds remained for local consumption; the proportion of local consumption to the exports was small.

Local production of and imports of cotton cloth.

The total productions of cloth in the Indian cotton mills for the five years 1910-11 to 1914-15 were as follows :—

Year.	Million of yards.
1914-15	1,135
1913-14	1,164
1912-13	1,220
1911-12	1,136
1910-11	1,042

Of this a certain amount was exported, chiefly to the Straits Settlements, the Persian Gulf and Ceylon.

The total exports of cotton were :—

Year.	Million of yards.
1914-15	67
1913-14	89
1912-13	86
1911-12	81
1910-11	99

Whereas the amount of piece goods imported into India was as follows :—

Railway traffic in cotton.

Year.	Million of yards.
1914-15	2,445
1913-14	3,197
1912-13	3,022
1911-12	2,437
1910-11	2,308

It will thus be seen that inspite of the fact that India produces one-eighth of world's requirements of cotton it has to import large quantities of cloth from foreign countries, especially from the United Kingdom, and India sends away a large amount of its raw production to foreign countries.

A statement on the next page shows the weight of cotton (raw) traffic carried by different railways for the period 1910-1914 and the earnings derived therefrom.

The number of cotton-weaving and spinning mills in India are about 266, of which 86 are in Bombay. Ahmedabad is also a big cotton-milling centre, next to Bombay. In 1916, of the total number of 6,839,877 spindles and 110,268 looms, Bombay accounted for 2,984,575 spindles and 52,205 looms.

Cotton Raw.

—	1910.		1911.		1912.		1913.		1914.	
	Weight.	Earnings.	Weight	Earnings.	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
East Indian Railway	61,250	5,81,304	31,243	2,68,580	43,481	3,52,542	66,258	4,63,332	59,361	4,51,478
Bengal Nagpur Railway	16,787	2,11,214	11,393	1,61,811	15,147	2,01,883	31,438	4,53,971	27,643	4,04,893
Madras and Southern Mahratta Railway.	133,321	14,55,062	121,468	15,04,695	134,323	16,92,182	126,740	15,36,341	97,535	12,52,395
South India Railway	44,795	2,97,090	56,729	3,53,887	73,330	4,63,918	58,290	4,09,623	48,164	3,74,966
Nizam's Guaranteed State Railway .	7,328	46,178	6,977	50,039	10,263	71,044	14,838	97,686	10,402	61,171
Great Indian Peninsula Railway .	370,163	85,93,858	284,960	65,34,574	357,185	83,07,948	451,576	98,55,830	384,759	86,04,687
Bombay, Baroda and Central India Railway.	225,267	24,36,222	182,588	20,01,824	169,996	25,43,663	256,375	39,97,167	227,547	28,78,896
Oudh and Rohilkhund Railway .	23,671	1,10,899	6,132	32,592	12,012	52,995	14,296	82,413	22,272	1,64,299
Rohilkhund and Kumaon Railway .	2,763	8,180	623	3,058	850	3,400	744	3,501	4,544	19,621
North Western Railway . . .	134,421	17,36,870	96,584	9,58,817	149,954	19,09,315	170,220	24,58,459	130,821	14,23,850

It will be observed from the above statement that the principal cotton-carrying lines are :—

1. The Great Indian Peninsula Railway,
2. The Bombay, Baroda and Central India Railway,
3. The North Western Railway,
4. The Madras and Southern Mahratta Railway.

Railway rates on cotton

Dealing with the rates for cotton on the Great Indian Peninsula Railway it may be mentioned that the general classification for cotton on all Indian Railways is second class, *viz.*, ·50 pie per maund per mile ; but the Great Indian Peninsula Railway have been allowed to maintain a higher classification, *viz.*, ·80 pie per maund per mile. The reason for higher rates of the Great Indian Peninsula Railway has already been given in pages 128, 129, 215, 216 and 217.

The weight of the traffic despatched from the principal cotton-despatching stations on the Great Indian Peninsula Railway during 1911 was as shown below, and the rates from such stations to Bombay have also been shown as the traffic was principally to Bombay—

Maunds.	Distance from Bombay	Names of station.	Owner's risk rates.			Railway risk rates.		
			Per maund.			Per maund.		
	Miles		Rs.	A.	P.	Rs.	A.	P.
3,51,864	239	Dhulia	0	11	6	0	12	0
1,09,378	232	Pachora	0	15	1	0	15	7
2,08,785	261	Jalgaon	0	14	7	0	15	1
1,85,343	280	Erandol Road	0	13	6	0	14	0
1,83,270	340	Shegaon	1	4	11	1	5	3
2,73,181	363	Akola	1	6	2	1	6	8
5,17,081	419	Amraoti	1	4	7	1	5	1
1,31,543	472	Wardha	1	2	5	1	2	11
1,47,625	453	Pulgaon	1	3	0	1	3	6
3,18,220	341	Khamgaon	1	4	11	1	5	5
1,37,335	308	Malkapur	1	3	2	1	3	8
2,40,228	353	Khandwa	1	2	8	1	3	2
3,25,579	520	Nagpur	0	14	1	0	14	7
4,97,359	119	*Viâ* Poona		..		0	3	3*
3,24,011	162	*Viâ* Manmad		..		0	11	4

* This is the Great Indian Peninsula proportion of the Hubli rate.

The subject of these special rates constituting undue preference, *i.e.*, charges for longer distances being lesser than for shorter leads, has been fully dealt with in the chapter on "Undue Preference."

The despatches from the Bombay, Baroda and Central India Railway stations to Bombay during 1911 and the rates, that are now in force, are shown below :—

Distance.	Name of station.	Maunds.	Owner's Risk.	Railway Risk.
Miles.			Rs. A. P.	Rs. A. P.
134	Bilimora	22,625	..	..
147	Navasari	21,817	0 3 11	0 4 5
165	Surat	92,680	0 4 6	0 5 0
174	Sayan	18,551	0 4 9	0 5 3
196	Anklesvar	1,60,892	0 4 9	0 5 3
202	Broach	1,89,643	0 4 9	0 5 3
218	Palej	2,16,534	0 6 2	0 6 8
227	Miyagam	1,24,806	0 6 7	0 7 1
234	Itola	52,045	0 6 11	0 7 5
348	Viramgam	1,00,836	0 8 10	0 9 4
388	Wadhwan	34,771	..	0 8 10
227	*Viâ* Miyamgam	1,71,016	0 6 7	0 7 1
313	*Viâ* Sabarmati	3,48,427	0 13 4	1 1 8

During the years, *viz.*, from 1909-1911, the average annual price per maund of cotton in Berar and in Bombay varied as under :—

Berar Price.

—	1909.	1910.	1911.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Ginned	20 6 0	26 5 8	27 11 0
Unginned	7 8 6	8 9 2	9 10 4
Bombay Price.			
Cotton Broach fine	28 8 2	37 12 5	36 3 4
Cotton Broach good	24 0 9	33 6 5	31 11 3
Khandesh F. G.	23 1 8	28 13 2	30 7 10

Difference between the price of cotton at ginning centres and that in Bombay—

—	1909.	1910.	1911.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Cotton Broach fine	8 2 2	11 6 9	8 8 4
Cotton Broach good	3 10 9	7 0 9	4 0 3
Khandesh F.G.	2 11 8	1 7 6	2 12 10

In the first place, there is a wide difference between the price of ginned and unginned cotton. Taking even Rs. 6 per maund as the cost of ginning, pressing and baling, and the gain from cotton seed at Re. 1 per maund, there remains a good margin of profit for the seller in the mofussil. Then, again, the difference between the prices of Bombay and those of the ginning centres also leaves a fair margin of profit to the seller. It will be seen that taking Khandesh cotton, for which the price in Bombay was at the lowest figure, there was a difference of not less than Rs. 2-10-6 per maund, whereas the highest railway freight was Re 0-11-7 per maund from Jalgaon to Bombay. The Great Indian Peninsula Railway rates, though based on a high figure as compared with the rates of other lines, are therefore such as the traffic can bear.

The rates of the Bombay, Baroda and Central India Railway are necessarily low because of their stations, which despatch cotton to Bombay, being situated not far from the sea coast on the west. Whereas the Great Indian Peninsula Railway rate from Pachora to Bombay, 232 miles, is Re. 0-15-1 per maund, that on the Bombay, Baroda line from Itola to Bombay, 231 miles, is Re. 0-6-11 per maund (less than half for practically the same distance).

Now to deal with the special rates for cotton that are in force over the Bombay, Baroda and Central India and Great Indian Peninsula Railways for local mills. The following special quotations, at owner's risk, appear in both Railways tariffs—

Bombay, Baroda and Central India Railway :—

From	Miles.	To	Per maund. Rs. A. P.
Amalner	302	Ahmedabad	0 13 2
Chaltkan .	152	Do.	0 5 0
Nandurbar .	242	Do.	0 10 2

Distance.	From	To	Owner's Risk Rate per maund.	Railway Risk Rate per maund.
Miles.			Rs. A. P.	Rs. A. P.
196	Khamgaon	Nagpur	0 9 1	0 9 7
94	Warora	Do.	0 5 4	0 5 10
114	Amraoti	Do.	0 6 6	0 7 0
384	Harda	Do.	1 4 7	1 5 1
371	Malkapur	Jubbulpore	1 4 9	1 5 3
475	Morena	Do.	0 12 6	0 13 0

The Great Indian Peninsula rates are on a higher basis, whereas the Great Indian Peninsula rate for 114 miles is Re. 0-6-6, the Bombay, Baroda and Central India Railway rate for 152 miles is Re. 0-5-0.

Out of 2,296,769 maunds of cotton traffic carried by the Madras and Southern Mahratta Railway during 1911 the despatches to *viâ* Murmagao Harbour were 745,474 maunds. The principal bookings were from :—

Distance.	Name of station.	Rate per maund.	Maunds.
Miles.		Rs. A. P.	
334	Adoni	0 15 8	35,869
142	Hubli	0 7 5	255,874
178	Gadag	0 8 11	98,396
119	Belgaum	0 6 6	16,939
236	Bagalkot	0 11 4	125,637
292	Bijapur	0 10 8	148,811
232	Devangere	0 11 2	30,519

While the despatches to Madras were from :—

Distance.	Name of station.	Maunds.	Rate per maund.
Miles.			Rs. A. P.
43	Arkonam	15,329	0 2 7
186	Yerraguntla	19,560	0 8 3
228	Tadpatri	33,643	0 10 0
276	Guntakul	90,600	0 12 0

Distance.	Name of station.	Maunds.	Rate per maund.		
Miles.			Rs.	A.	P.
308	Adoni	85,519	0	13	4
351	Raichur	91,172	0	15	2
307	Bellary	55,989	0	13	4
367	Nandyal	45,238	0	15	10
265	Guntur	33,491	0	8	0
421	Devangere	28,001	1	2	1
351	*Viâ* Raichur	17,399	0	14	11
132	*Viâ* Jalarpet	25,473	0	5	9
268	*Viâ* Bezwada	18,131	0	7	5

Viâ Poona :—

Distance.	Name of station.	Maunds.	Rate per maund.		
Miles.			Rs.	A.	P.
333	Hubli	161,909	0	8	8
369	Gadag	130,378	0	10	0
171	Shedbal	99,134	0	7	5
160	Miraj	13,738	0	6	11
423	Devangere	29,517	0	11	11

Out of the total traffic of 2,629,026 maunds carried by the North Western Railway during 1911, 1,557,873 maunds of traffic were despatched to the Karachi port. The principal despatching stations were :—

Distance.	Name of station.	Maunds.	Rate per maund.		
Miles.			Rs.	A.	P.
575	Multan	64,115	1	0	9
929	Peshawar	32,982	1	10	7
111	Hyderabad (Sind)	226,016	0	3	10
786	Amritsar	36,178	1	6	8
684	Lyallpur	70,745	1	3	9

Distance.	Name of station.	Maunds.	Rate per maund.		
Miles.			Rs.	A.	P.
721	Sargodha	13,786	1	4	9
897	Saharanpur	31,091	1	6	5
847	Amballa Cantonment	22,338	1	6	1
802	Jullundur City and Cantonment	29,503	1	6	10
755	Lahore	27,740	1	5	9
731	Kasur	105,170	1	5	4
711	Sangla Hill	39,391	1	4	6
653	Gojra	35,707	1	2	11

Whereas the rates to Delhi where there is a cotton mill, from these places compare as under :—

Distance.	Name of station.	Rate per maund.		
Miles.		Rs.	A.	P.
454	Multan	1	3	2
582	Peshawar	1	8	6
708	Hyderabad (Sind)	2	1	6
288	Amritsar	0	11	11
387	Lyallpur	1	0	5
471	Sargodha	1	3	11
240	Jullundur City	0	9	0
297	Lahore	0	12	8
255	Kasur	0	10	11
358	Sangla Hill	0	15	2
417	Gojra	1	1	8

A glance at the above statement will show that North Western Railway rates for cotton are favourable for export trade *viâ* Karachi, whereas the rates for local mills such as Delhi are comparatively higher. The rate for cotton from Multan to Karachi, 575 miles, is Rs. 1-0-9 per maund, whereas the rate from the same place to Delhi is Rs. 1-3-2, the distance being 454 miles. Similarly while the rate from Peshawar to Karachi, 929 miles, is Rs. 1-10-7, the rate for Delhi, 582 miles, is Rs. 1-8-6 ; or if a comparison of rates is made distance for distance it would appear that for an extra lead of 347 miles the North Western Railway charge is Re. 0-2-1, or less than even $\frac{1}{11}$th pie per maund per mile in the case of Karachi.

In connection with the growing of cotton in India, the International Cotton Federation sent a deputation to the Secretary of State on 22nd July 1913 to urge upon him the importance of encouraging in every way the growth of cotton in India. The President of the Federation amongst other things pointed out the following:—

Question of development of cotton cultivation in India.

"The International Federation of Master Cotton Spinner's and Manufacturers Association includes in its membership, or has, in co-operation with it, practically all the cotton growing and cotton manufacturing countries of the world; and it has become increasingly evident that the problems connected with the supply of the raw material of the world's cotton industry can only be dealt with effectually by international co-operation.

"Five-eighths of the cotton crop of the world is provided by the United States of America, and it is from India that the next largest supply comes. The present season's crop of Indian cotton, it is estimated, will amount to 6,000,000 bales of about 400 lbs. each and when I mention that the cotton crop of the world now averages over 20,000,000 bales of an average weight of 500 lbs. each, it will show what an important factor the Indian cotton crop is in the supply of the raw material for this industry which plays the chief part in clothing the people of the world.

"The development in the cultivation of Indian cotton has been very marked during recent years, and if the present season's crop reaches 6,000,000 bales, as is anticipated, its total value at the present prices will amount to something like £50,000,000.

"Statistics show that the cotton crop of the world is now about 3 times greater than it was 35 to 40 years ago, but notwithstanding this remarkable development, it is obvious to those who study future requirements, that the extension of the cotton fields of the world must proceed much more rapidly than has been the case if the raw material is to keep pace with the demand for cotton goods. It is, therefore, apparent that in India which, owing to exceptional circumstances, is capable of much more rapid development than any other part of the world, no effort should be spared to bring about this much needed development. A study of the annual and the special Reports issued by the International Cotton Federation since its inauguration in 1904, will show that this important subject has received a large share of attention, and that an adequate supply of Indian cotton is a matter of supreme interest, not only to India itself, but to Japan, Germany, France, Italy, and Belgium, and to a smaller extent to Lancashire. But no narrow view of the question must be taken, for the greater the supply of cotton from India fot those countries which can use it largely, the greater will be the quantity of those other qualities of cotton more suitable to the requirements of the English cotton industry which is engaged in producing a much larger proportion of the finer qualities of goods than other countries, which are exported to practically all the countries of the world."

The German representative said :—

" The coarse Indian cotton suited the German trade, but it should be remembered that every bale of Indian cotton used by Continental nations liberated a bale of American or Egyptian cotton for the English industry."

Whereas Mr. J. B. Tattersall, representative of England, stated as follows :—

" There was a strong feeling that the increase of the growth of cotton in India free from adulteration would be of great financial benefit to the people of India as well as to the workmen of this country."

Lord Crewe made the following remarks in his reply :—

" It was a striking fact that not merely the interests of the great cotton manufacturing trade of this country were supported by the presence of a number of Members of Parliament, but that representatives of Germany, France, Japan, and Belgium had advanced arguments in favour of the promotion of cotton-growing in India on large and cosmopolitan grounds.

" The most generally important subject which they had brought to his notice was that connected with an increase in the growth of cotton. Herr Langen (the German representative) had mentioned the belief that the output of Indian cotton might in a short period be increased from 6,000,000 bales to 10,000,000 bales. This expectation, though he did not attempt to dispute it, might be regarded as being somewhat on the sanguine side. As regards large and immediate expansion, it was recognised that certain qualifications must be admitted. It was not reasonable to ask the Indian cultivator to displace other crops by cotton unless the cultivator could be definitely assured that the cotton crop would be more lucrative than that of which it took the place. Of course there were other means of expansion beside that of replacing one crop by another. There were, for instance, canal colonies; that was to say land which had been brought into cultivation by irrigation. Some part of such land was set apart for the growing of cotton. There was also the possibility of the substitution of a superior for an inferior quality of cotton. He was glad to admit that something substantial might be hoped in the direction of an increased output, but it was also necessary to admit that in the effort to improve disappointment sometimes occurred."

The Cotton Commission and the Indian Industrial Commission respectively will deal with the agricultural and the industrial development of cotton, and nothing more, therefore, is necessary to be stated in this book.

CHAPTER XIV.

OILSEEDS.

Oilseeds can be classed with the principal agricultural produces of India. The importance lies in the fact that not only is oil extracted from oilseeds, but that the bye-product of oil extraction (oil-cake) is used as cattle food and as manure.

The following useful and interesting article on "The Indian Oilseeds" contributed by Mr. S. A. Pande, M.A., LL.B., in the Hindustan Review, gives a clear and comprehensive idea of the subject.

Area under oil-seeds.

"The term 'oil-seeds' includes, linseed, sesamum or til, rape seed, castor seeds, ground nuts, poppy seeds, coconut-seed and cotton seed. Linseed is grown chiefly for its seed, which is valuable for the oil extracted therefrom, and for the oil-cake which is a very important cattle food. In more temperate countries this plant is grown for its fibre also, but experimental efforts made to extract flax from the Indian plant, were not crowned with any appreciable success.

"Sesamum or til is grown, and prized for the oil which is used to a large extent in Indian cookery, and for the oil-cake which is an excellent cattle food. Some varieties of it are largely used in the preparation of native sweetmeats also. Rapeseed is valuable on account of the oil, and the oil-cake which is a very good cattle-food. Castor-seed is valuable because of the oil. The oil-cake is not suitable for cattle-food, but is good for manure. Poppy-seed is chiefly exported to Europe it yields clear and limpid oil which is used to adulterate olive oil; the oil-cake is a good cattle-food. Coconut-seed is valuable for its oil which is used in soap-making. All the above oil-cakes are very effective, and economic manures for crops like sugar cane, in addition to their other uses.

Area under Oil-Seeds.

"The table given below shows the area under oil-seeds for some years; the figures are taken from the official sources and relate to British India only.

TABLE I.—*Area in Acres.*

Name of the crop.	1903-04	1906-07.	1910-11.	1912-13.
Linseed	3,234,213	2,514,884	2,512,032	3,125,067
Sesamum	4,652,765	3,908,328	4,211,829	4,164,045
Rape & Mustard	3,430,525	4,231,554	3,898,746	3,555,300
Other oil-seeds	3,228,463	3,310,599	3,911,623	4,091,368
TOTAL OIL-SEEDS	14,545,966	13,965,365	14,534,230	14,935,780
Rice	69,596,654	73,541,118	78,524,391	78,752,493
Wheat	23,612,730	25,137,416	24,397,699	23,861,185
Net area under crops	208,273,095	214,025,596	233,064,601	224,165,602

" A careful survey of the above figures will reveal to the reader, the place which the oil-seeds occupy, among the important crops of British India. Rice occupies the first place with respect to the area under cultivation, among all sorts of crops in British India. Wheat occupies the second place. Jawar (or millets) of which, figures are not included in the above table, comes the third, and fourth in the list are the oil-seeds. Then comes the cotton ; all other crops like sugar-cane, jute, and food grains of different kinds stand lower in the scale, so far as the area under cultivation is concerned the table given below is intended to show the area under cultivation in the different provinces of British India in the official year of 1912-13. The table shows the area in acres occupied by different oil-seeds.

TABLE II.—*Area in Acres for 1912-13.*

Provinces.	Linseed.	Sesamum.	Rape and mustard.	Other oil-seeds.	Total oil-seeds
Bengal	109,800	251,200	1,325,400	45,800	1,822,200
Behar and Orissa . . .	677,200	228,400	724,600	543,700	2,173,900
United Provinces, Agra . .	340,169	297,197	75,144	58,120	770,630
United Provinces, Oudh . .	153,316	19,996	72,487	1,804	247,601
Panjab	43,313	157,928	887,781	4,668	1,093,690
Central Provinces . . .	1,410,879	694,917	42,229	388,604	2,536,629
Bombay . .	165,865	280,915	4,295	531,409	982,484
Madras	22,466	812,876		2,107,153	2,942,495
TOTAL INCLDING ALL OTHER PROVINCES.	3,125,067	4,164,045	3,555,300	4,091,368	14,935,780

" In addition to the provinces enumerated above, extensive area is devoted to the cultivation of oil-seeds of one sort or the other, in the provinces of Burma, Assam, Berar, Sind, Coorg, Ajmere, and North-West Frontier. It will appear from the table II that linseed is most important in the Central Provinces, with an average cultivation of about 1,600 square miles, including Berar. It is also extensively grown in Behar and Orissa, United Provinces, Bombay and Bengal. Nearly 5,000 square miles of linseed are grown in India.

" About 6,600 square miles of sesamum are cultivated in India. Bengal had the largest average area under cultivation for the ten years ending 1899-1900. In the year under review we have the largest area in Upper Burma. Next stands Madras ; then Central Provinces and Berar. Large areas are cultivated also in Bengal, Behar and Orissa, United Provinces, Bombay and Panjab. Generally also these provinces grow til or sesamum on a large scale.

" Rape is principally grown in Bengal, Behar and Orissa, United Provinces and the Panjab. In the year under review, Bengal has by far the largest area under rape ; then comes Panjab ; third is Behar

and Orissa ; Assam also devotes large area. Coconut and ground-nuts are produced more in Southern India than the North.

Production of Oil-Seeds.

" Figures are available to show the estimated yield of some of the oil-seeds of British India, including some of the Native States. The table given below shows the estimated yield in tons.

Production of oil-seeds.

TABLE III.—*Production in Tons.*

Name of the crop.	1903-04.	1906-07.	1910-11.	1912-13.
Linseed	571,832	425,200	563,600	535,700
Rape and Mustard . .	1,165,206	1,053,100	1,233,200	1,220,400
Sesamum	609,478	541,000	511,800	471,700
Ground-nut	94,419	273,700	503,200	631,400

" This table may serve to show the general trend of production ; the increased production is as a general rule due to increased area under cultivation. It is not due to intensive cultivation, but due to extensive cultivation that there is an increase in production, wherever increase is found. Manuring the exhausted soil liberally would improve production without a corresponding increase in area in provinces where water supply is ensured by irrigation or otherwise.

" But circumstanced as the general Indian farmer is, he cannot have manures because of the cost being beyond his scanty means. The question of cheap manures can be effectively solved, if our large exports of oil-seeds cease. If we improve our oil pressing industry, if we find uses and markets for the pressed oil instead of for the unpressed oil-seeds we shall be able to keep a large amount of oil-cake in the country itself ; the oil-cake in that case will be cheaper than it is at present and may perhaps be utilized by the Indian agriculturist for manuring purposes. Under the present state of affairs, oil-seeds are exported to an enormous extent, because the country itself has not been able as yet to devise and invent uses and industries involving considerable consumption of the different vegetable oils. Once efforts are made in this direction the oil-seeds will be purchased in the country itself, will be pressed also in the country itself, and thus much oil-cake will be available in the country, thus leading to the fertilization of considerable areas ; the manure of the oil-cake will surely be cheaper than it is at present and perhaps will be within the means of many a farmer because of the increased supply.

" Under the present circumstances, it becomes impossible or at least prohibitive for the average agriculturist to import the oil-cake from abroad, of the oil-seeds exported from India. Careful research

and investigations should be made into the possibilities of the uses for the vegetable oils expressed from the oil-seeds of British India in British India herself.

Exports of Oil-Seeds and Oil-cakes.

" To give the readers a rough idea of the exports of oil-seeds, a table showing the value of oil-seeds, oil and oil-cake exported from India to foreign countries overseas is given below. The figures are in sovereigns. The figures are given for a few years to show only the general trend of affairs.

" The figures are taken from official sources and may serve to show approximate results :—

Exports of oil-seeds and oil cakes.

TABLE IV.—*Showing the Value of Exports.*

Name of export.	1903-04.	1906-07.	1910-11.	1912-13.
	£	£	£	£
Oils	633,059	382,891	572,539	571,945
Oil-cake	261,231	506,608	559,594	821,387
Oil-seeds	9,958,861	8,807,509	17,275,098	15,139,836

" From the stand points of value, the oil-seeds occupy a very high position in the scale of exports. Added to oils and oil-cake, they form a very important item in the table of exports. They stand fourth in the scale, cotton, jute, and rice being above them in the scale of the principal exports from British India by sea to foreign countries; besides some quantity may be going to adjoining countries by land also. This shows the enormous loss of oil-cake as a manure to India. As regards the exports of oil-seeds the Gazetteer, Volume III, has the following :—

" There is a large export of oil-seeds from India, the principal heads being linseed, sesamum, rape, cotton seed, castor seed, ground-nuts, coconuts and poppy seed. The export of these seeds instead of the expressed oil is injurious from an agricultural point of view, as it deprives the soil of useful manurial constituents. 'It is satisfactory therefore' says the Gazetteer, 'to note that the local production of oil from these seeds is making progress. In 1903, the number of the more important oil-mills was ninety-nine, employing about 4,600 persons. The suburbs of Calcutta are crowded with castor oil-mills.'

" Practically all the oil-seeds exported are sent to Europe for utilization in the soap and candle factories of the United Kingdom, and the continent, mainly France, Germany and Belgium," says the

Gazetteer. The trade in cotton seed, though of recent origin, has also assumed considerable proportions. The magnitude of the commerce in oil-seeds is surprising. The exports of oil-seeds continue to expand subject to the fluctuations that affect all agricultural produce. Earnest endeavours should be made to find markets and uses in the country itself for all oil-seeds thus leading to decrease in exports of oil-cake. The agriculturist and the middle man both dispose of the raw materials of oil-seeds to slake their immediate thirst for profits, thus leading to the sacrifice of the more remote but permanent interests, *viz.*, enriching the land by the manure of oil-cakes and enriching the poor Indian cattle which will generally be found in all parts of India, to be in a very famished state. 'At present we take everything from the land, and give back virtually nothing, an economic drain akin to living on one's capital' says Mr. Silver, Director of Industries, Cawnpore. The same holds good of our poor cattle. We neglect them also too much.

The Uses of the Oil.

The uses of the oil.

" According to Mr. Silver, the conditions in this country are quite suitable for oil-pressing. 'As a matter of fact,' says he, 'they approach to the ideal. All seeds give a better yield of oil, and of a better quality when crushed fresh, and the oil-cells yield their oil more readily in a warm climate than in cold. Here then we have two factors in favour of manufacturing the oil locally, namely, seed available on the spot, and a climate more favourable than that of Europe for the purpose of manufacture. The disposal of the cake may present some difficulties in the earlier stages as the agriculturists have not yet taken largely to this for feeding and manurial purposes, but its use is extending fairly rapidly' (*vide* Mr. Silver's article in " Wealth of India," December 1915). Besides the uses of oil-cake as a manure and cattle food, oil itself has many industrial uses. Linseed oil is used largely in preparation of oil paint and varnishes. Linseed oil is also the principal ingredient in printing and lithographic inks. Dyers and leatherworkers use oil for their trade. In soap and candle manufacture, oils form a very important and an indispensable factor, oils are also used for the anointment of the person, and for illuminating purposes. With careful experiments and research, we may be able to establish soap industry on a sound commercial basis, thus leading to larger consumption of oils. Also we may, if we try, discover good modernized but cheap lamps suitable to the use of the vegetable oils for illuminating purposes. We may thus be able to dispense with a little of the foreign kerosine oil. We must invent suitable lamps for the purpose. It is said, when the American Standard Oil Company exported their kerosine to China, they were unable to sell it satisfactorily, on careful inquiry, they found out, that the absence of good lamps was the deterrant factor in the sale of the kerosine oil; they therefore arranged for the manufacture of good and suitable lamps which when placed on the China market enabled the company both to dispose of the lamps and the oil. If somebody invents lamps with chimneys enabling us to use some of the vegetable oils for illuminating purposes, and if the oils prove cheap in comparison with the foreign kerosine, indigenous oils will find greater sale in the country itself Experiments therefore need to be made to see if it is possible to substitute some of the vegetable oils of India, for kerosine for illumination. As for the cost of the vegetable oils, they are sure to prove cheaper than at present, if we cease to export oil-seeds; and we shall surely cease to export oil-seeds if we find out, and develop some of the industrial uses of the oils in the country itself. In the production of fabrics that bear the name of the " wax-cloth " Indians exhibit the knowledge of the drying property of oil. The oil of safflower is much used for the manufacture of the wax-cloth by preparation of Roghen. Wax-cloths are prepared by Afridis in Peshawar, and other towns in North India. Linseed and castor-seed oil are also used for the same purpose.

The Gazetteer has the following on this point :—

" This small and unimportant industry is the only example in India akin to the wax-cloth and linoleum industries of Europe; India imports a considerable amount of wax-cloth and linoleum. In 1903-04 they had risen to 4·2 lakhs of rupees. There would thus seem ample room for the establishment in India of oil-cloth, linoleum, and waterproof sheeting factories." Some students may be sent to the foreign countries to study this industry of oil cloths, so that they may open the same in India, oils are also used as a base for the preparation of perfumery and essential oils. Oils of India may also be substituted for the foreign tallow, and in paints and dying substances, oils must be forming important ingredients. Considerable quantities are imported of these three substances into India. Careful and organised inquiry should be made to find out uses and markets for our oils rather than oilseed. Students should be sent abroad to study the uses of oils in foreign countries, so that the same may be developed in India; that the Indian conditions are favourable is shown by Mr. Silver whom I have quoted above. We also import large quantities of lubricating oils from abroad for machinery, cycles, motors and the like. I think, with careful experiments, we may be able to substitute good purified castor oil or other vegetable oil for foreign products for lubricating purposes. I shall now show the imports of oils and other substances for which our oils may perhaps be a proper substitute.

Imports of Oils and other Kindred Substances.

" I give below a table showing the value of imported oils, vegetable and mineral, and other substances akin to oils for which oils may be substituted, or in which oils form an important ingredient. I think India should develop the manufacture of all such substances.

Table V.—*Value in £ of imports into India.*

Name of the import.	1903-04.	1906-07.	1910-11.	1912-13.
Oils, mineral . . .	2,299,253	1,615,397	2,248,707	2,502,097
Oils, animal, vegetable, etc.	103,192	227,193	145,338	158,070
Tallow	39,542	60,989	79,933	126,887

" Besides the above there are imported into the country large quantities of dyeing substances, paints, and soap. Oils are required to a large extent in the manufacture of the above mentioned substances. With the imports of some other ingredients, we may be able to manufacture the above substances ourselves.

" Investigations may also be made as to the uses to which the foreign oils imported as shown in the above table are put in India, and efforts should be made to substitute indigenous oils for the same."

Takings of oil-seeds by various ports and export trade.

The following statement shows the quantities of oil-seeds carried to Bombay, Calcutta and Karachi by the principal railways during the year 1911 :—

Railway.	Calcutta	Bombay	Karachi.
	Tons	Tons	Tons.
Great Indian Peninsula	..	718,943	..
Bombay, Baroda and Central India . .	.	127,019	..
East Indian	112,009	*	..
Bengal Nagpur	9,800	*	..
North-Western	..		215,483

The export trade in principal kinds of oil-seeds was as follows during the following official years :—

——		1907-08.	1908-09.	1909-10.
Castor seed	Cwts.	1,993,717	1,650,466	1,900,769
	Rs	1,51,78,026	1,05,82,03	1,26,06,522
Cotton seed	Cwts.	4,249,832	3,683,372	5,649,817
	Rs.	1,31,60,577	1,31,27,300	2,03,17,968
Ground nut seed . . .	Cwts.	1,524,055	1,781,849	3,243,163
	Rs.	1,17,88,693	1,35,05,528	2,47,00,222
Linseed	Cwts.	6,197,882	3,209,547	4,677,197
	Rs.	4,78,67,253	2,55,52,867	3,92,53,017
Poppy seed	Cwts.	1,256,562	790,028	853,140
	Rs.	1,25,21,086	83,00,583	80,91,356
Rape seed	Cwts.	5,343,420	2,765,776	6,629,313
	Rs.	4,32,55,886	2,36,93,033	4,68,32,420
Til or Gingilly seed . . .	Cwts.	1,553,378	1,657,292	2,983,630
	Rs.	1,69,17,266	1,62,61,076	2,65,91,511

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* Included with Great Indian Peninsula Railway traffic.

The export of oil-seeds during 1910-11 was as follows :—

To	Poppy seed.	Castor seed.	Ground nuts.	Linseed.	Rape and mustard.	Til seed.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwst.
The British Empire . . .	712	1,114,292	53,590	2,773,745	821,219	16,142
Other Foreign countries . .	861,088	1,033,741	3,636,546	4,637,290	5,851,187	3,230,388
TOTAL .	861,800	2,148,033	3,690,136	7,411,035	6,672,406	3,246,530

The following statement shows the quantities of Poppy seed, Castor seed, Ground nuts, Linseed, Rape and Mustard seeds, and Til seed exported from the ports of Calcutta, Bombay, Madras, Karachi and Burma during 1910-11 :—

—	Poppy seed.	Castor seed.	Ground nuts.	Linseed.	Rape and Mustard seed.	Til seed.
	Cwts.	Cwts.	Cwts	Cwts.	Cwts	Cwts.
Calcutta	252,861	216,044	27	4,544,895	607,943	93,374
Bombay	608,935	1,768,610	982,977	2,819,799	2,249,803	2,499,093
Madras	.	160,205	2,598,347	..	45,955	78,564
Karachi	4	2,812	1,201	46,302	3,768,705	574,819
Burma	..	302	107,584	39	..	680
TOTAL .	861,800	2,148,033	3,690,136	7,411,035	6,672,406	3,246,530

Railway traffic in oil-seeds.

The total traffic in oil-seeds over the Great Indian Peninsula Railway during 1911 was 799,609 tons, of which 718,943 tons was to Bombay alone. Much of this traffic to Bombay was through traffic, as will be seen from the following statement :—

Traffic in oil-seeds to Bombay from foreign railways during 1911.

—	Weight.	Earnings.
	Tons.	Rs.
Nizam's Guaranteed State Railway *viâ* Wadi .	125,056	8,18,264
Hyderabad Godavari Valley Railway *viâ* Manmad	55,337	4,60,452
Madras and Southern Mahratta Railway *viâ* Poona	55,112	2,66,620
Bengal Nagpur Railway *viâ* Nagpur . . .	42,745	3,91,977
Barsi Light Railway *viâ* Barsi Road . . .	38,569	4,57,557
Oudh and Rohilkhund Railway *viâ* Cawnpore	33,504	4,00,165
Bengal and North-Western Railway *viâ* Cawnpore	13,173	1,57,502

As regards local traffic to Bombay in 1911 the principal despatching stations were :—

Name of station.	Weight.	Earnings.
	Tons.	Rs.
Generalganj (Cawnpore)	14,410	1,71.059
Nagpur	13,765	1,26,730
Khandwa	11,192	1,36,587
Warora	10,678	1,49,671
Sholapur	10,664	1.58,633
Akola	10,492	1,32,778
Hinganghat	10,356	1,34,212

We find from the above that of the whole traffic in oil-seeds over the Great Indian Peninsula Railway during 1911 about 90 per cent. was to Bombay alone, obviously for export. It should now be the endeavour to minimise the export of oil-seeds and gradually increase the export of oil. By this means not only will it be providing means of livelihood to many people by giving them work in the oil-mills, but that the bye-product of oil-manufacture, *viz.*, oil-cake, will be available for cattle feeding and also for manuring purposes.

The value of manures in increasing the fertility of the land cannot be overestimated. Oil-cake is an important "manure," and so the question of fertility of Indian soil is intimately blended with that of export of oil-seeds. Bones are no doubt injurious to health when they lie in the state in which they are stocked and dried before being despatched by rail, and they should, therefore, be stocked and crushed as far away from human habitation as possible. But all the same, bone, bone dust, and bone shavings are very rich in phosphates, and bone meal together with castor cake has been found to be very good manure for sugar cane. But the crushed bones are exported to be used as manure in other countries, and although the railways serving the Calcutta, Bombay and Karachi ports quote very low rates from up-country to these ports, there are no special rates for crushed bones from Bally, Thana, Karachi (where bones are crushed) to the agricultural districts. Oil cake is most needed for manuring sugarcane fields.

Until the oil industry in India is in its full swing which, however, can only be if it receives every assistance from all possible directions, it will not be wise to ask Government to stop the export of oil-seeds by legislation. Until there is a large demand for oil-seeds in the Indian oil mills, the endeavour to stop the export of oil-seeds would end in stagnation, and consequent decrease in the area under cultivation.

The Mustard and Rapeseed crop in the Panjab is also of importance. The export of rape and mustard seed from Karachi is pretty heavy, but there are hardly any exports of mustard or rape seed oil from that port. This is partly due to the want of local enterprise in starting oil mills in the Panjab on a large scale.

The total traffic in Rape and Mustard seed over the North Western Railway in 1911 amounted to 5,767,262 maunds, out of which 4,601,229 maunds was to Karachi for export to Europe and other countries, the export traffic amounting to 80 per cent. of the total traffic.

The principal despatching stations were :—

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Lyallpur	372,009	1,89,677
Gojra	329,570	1,76,779
Sargodha	270,477	1,53,496
Toba Tek Singh	241,089	1,13,935
Bhatinda	214,527	67,759
Sangla Hill	176,715	92,936
Narwana	136,087	40,080
Meerut City	62,548	32,302
Rohtak	60,155	18,509
Chiniot Road	55,333	29,179

The total traffic in oil-seeds during the calendar year 1911 over the East Indian Railway amounted to 586,182 tons, yielding an income of Rs. 41,10,347 to the railway. Out of this 176,317 tons was to Howrah and Sheds and 261,833 tons was to Khidderpore Docks. The traffic to Ultadanga and Chitpore was small, amounting to only 4,295 tons. So the total traffic to the Calcutta stations was 442,445 tons, or over 75 per cent. of the total traffic in oil-seeds of the railway.

Favourable rates are quoted by the East Indian Railway for oil-seeds from the United Provinces to Calcutta for the oil mills situated in or about Calcutta; but mustard and rape seed oil-cake, which are important articles of cattle fodder, are not carried at a low rate of freight from Calcutta stations to upcountry stations. It is a matter of much regret that while the United Provinces and Behar produce large quantities of oil-seeds, they are deprived of the oil-cake obtained by the crushing of these seeds in the oil mills Calcutta and the vicinity, although there are heavy exports of oil-cake from Calcutta to foreign countries. The country is being deprived of the fertilising value of the oil-cake as well as its use as cattle-fodder.

Most of the oil-seed traffic to Calcutta during the year 1911 was through traffic, the bookings *viâ* Moghalserai and *viâ* Mokameh Ghat being pretty heavy, *viz.*, 62,923 tons and 156,422 tons respectively.

The Oudh and Rohilkhand Railway also carry a pretty good traffic in oil-seeds. The traffic in rape and mustard seed during 1911 amounted to 1,009,670 maunds, in cotton seed to 166,017 maunds, and in other oil-seeds to 2,212,106 maunds. The traffic in rape and mustard seeds to Calcutta and Bombay was 624,129 maunds and 243,091 maunds respectively.

The principal rape and mustard seed despatching stations were :—

To Calcutta viâ *Moghalserai.*

Name of station.	Weight	Earnings.
	Maunds	Rs.
Jaunpur City	64,290	1,983
Badshahpur	60,656	4,594
Via Lucknow	55,304	11,876
Shahganj	48,124	3,646
Akbarpur	33,770	2,985
Chilbila	30,394	3,747
Bhadohi	25,325	2,325
Katahri	24,527	2,680
Hardoi	22,968	2,786
Bareilly	17,809	2,574
Sultanpur	16,554	1,986
Rai-Bareli	15,757	2,495
Malipur	13,888	1,270

To Bombay.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Badshahpur	10,410	2,237
Partabgarh	13,224	2,312
Siwait	13,132	1,824

To Bombay—contd.

Name of station	Weight.	Earnings.
	Maunds.	Rs.
Mau Aima	15,717	2,504
Sultanpur	34,417	6,656
Kurc Bhar	17,641	3,340
Chilbila	27,443	5,167
Antu	10,641	1,878
Rai-Bareli	15,090	2,257
Viâ Barabanki	30,015	1,927

The total traffic on the Bengal and North-Western Railway during 1911 in linseed amounted to 3,897,392 maunds with an earning of Rs. 5,97,852, and in rape and mustard seed to 1,740,310 maunds with an earning of Rs. 3,06,500. The linseed and rape and mustard seed traffic to Calcutta *viâ* Mokameh Ghat in 1911 was 3,457,958 maunds and 885,831 maunds respectively. The principal linseed despatching stations were :—

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Gorakhpur	109,228	19,318
Chauri Chaura	187,217	33,814
Savan	50,611	6,978
Uska Bazar	47,701	9,644
Bridgmanganj	59,694	12,984
Nawabganj	133,621	28,690
Muzaffarpur	147,244	17,023
Darbhanga	223,096	24,271
Motihari	46,644	8,534
Raxaul	60,388	11,021
Bettiah	169,997	29,091
Sitamarhi	199,503	29,026
Nirmali	78,662	11,484
Begu Sarai	47,777	2,321
Bairampur	65,574	16,802
Bahraich	44,524	8,760

The principal rape and mustard seed despatching stations were :—

Name of station.	Weight.	Earnings
	Maunds.	Rs.
Basti	34,981	7,322
Uska Bazar	41,666	8,428
Nawabganj	34,320	6,830
Darbhanga	38,418	4,458
Raxaul	20,688	3,756
Bettiah	18,155	2,798
Sitamarhi	20,024	2,600
Balrampur	55,369	15,369
Tulsipur	58,771	14,630
Jarwa Bazar	66,667	14,475
Bahraich	53.468	12,425
Nanpara	51,230	13,817

The oil-seed traffic on the Bengal Nagpur Railway is small compared with that on some other railways. The following gives the total traffic in the different kinds of oil-seeds on the Bengal Nagpur Railway in 1911 :—

	Weight.	Earnings.
	Tons	Rs.
Rape and mustard seed	19,524	1,48,958
Linseed	42,196	3,72,184
Castor seed	1,546	7,242
Poppy seed	605	3,093
Earthnuts	8,434	76,949
Tilseed	42,006	3,23,682
Other seeds	20,040	1,19,910
TOTAL	134,351	10,52,018

Out of the total of 134,351 tons, 42,745 tons were carried to Bombay *viâ* Nagpur, 1,495 *viâ* Katni and 1,984 *viâ* Jubbulpur. The total traffic to Shalimar was 15,580 tons. So it is seen that a good portion of this traffic was to Bombay and Calcutta. There are a few oil mills in Calcutta, where a portion of the Calcutta traffic might have come to for oil manufacturing, but the Bombay traffic is for the most part meant for export of oil-seeds in the raw state.

The principal stations despatching linseed were :—

Name of station.	Weight.	Earnings.
	Tons.	Rs.
Tumsar Road	1,661	5,862
Gondia	1,704	8,809
Dongargarh	3,067	26,750
Raj Nandgaon	5,491	53,588
Drug	2,706	25,143
Raipur	4,801	52,469
Dhamtari	1,935	22,601
Bhatapara	6,961	88,772
Bilaspur	1,076	10,382

The principal til seed despatching stations on the Bengal Nagpur Railway were :—

Name of station.	Weight.	Earnings.
	Tons.	Rs.
Raipur	6,588	63,571
Sahdol	1,526	10,051
Raigarh	908	11,217
Sambalpur	2,593	36,939
Cuttack	4,843	21,540

The traffic in Groundnuts, or Pea-nuts as it is locally called, is pretty heavy on the South Indian Railway, the railway carried as much as 4,167,733 maunds in the year 1911, earning an income of Rs. 6,11,329 therefrom.

As regards traffic to the ports in 1911, Pondicherry comes first with an inward traffic of 1,409,618 maunds; next comes Cuddalore with 995,910 maunds, then Negapatam with 873,269 maunds. The traffic to Madras Beach was 143,499 maunds, to Madras Egmore 22,952 maunds and to Porto Novo 121,278 maunds.

The traffic of the principal South Indian Railway stations to the respective ports is given below :—

To Pondicherry.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Tindivanam	247,532	33,820
Villupuram	179,877	18,815
Panruti	78,354	10,800
Tirumangalam	22,420	6,620
Arkonam	12,798	1,728
Valavanur	278,826	25,165
Tirukoilur	75,059	11,709
Tiruvannamalai	153,459	28,083
Arni	30,955	6,489
Vellore Cantonment	22,012	4,741
Sankaridrug	23,929	7,184
Via Arkonam	98,510	12,455
Via Katpadi	82,984	14,372

To Cuddalore O. T.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Panruti	508,489	27,355
Valavanur	49,161	4,521
Tiruvannamalai	99,052	18,797
Villupuram	38,611	4,747
Trichinopoly Fort	32,710	7,255
Karur	21,130	5,195
Podanur	18,958	5,698
Dindigul	18,952	4,717
Ambaturai	17,358	4,430
Tirukoilur	16,362	2,738
Kumbakonam	15,692	2,937
Tanjore Junction	14,444	2,877
Polur	13,004	2,410

To Negapatam.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Tanjore Junction	287,003	45,579
Budalur	27,370	4,944
Dindigul	33,923	7,496
Mariammankovil	59,148	9,110
Saliyamangalam	21,323	3,017
Ammapet	53,816	7,069
Nidamangalam	29,671	3,445
Pattukkottai	173,847	31,238
Trichinopoly Fort	19,441	3,794
Peravurani	24,082	4,725
Ayingudi	41,557	9,172

To Madras Beach.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Arni	49,157	8,272
Tindivanam	44,906	8,500
Conjeeveram	7,738	1,087
Panruti	6,299	1,347
Villupuram	5,866	1,239
Trichinopoly Fort	5,767	1,682
Tanjore Junction	4,180	1,132
Polur	3,610	582

To Madras Egmore.

Name of station.	Weight.	Earnings.
	Maunds.	Rs.
Valavanur	9,551	1,990
Polur	3,095	512
Tindivanam	2,424	475

From an article which appeared in the Journal of the Royal Society of Arts, the following useful remarks on the Pea-Nut industry of South India are quoted :—

"The pea-nut, or ground-nut (Arachis hypogea), although grown in places all over India as a garden and even an occasional field crop, is produced on a commercial scale only in the Madras and Bombay Presidencies, in Burma, and in that part of French India (Pondicherry) that adjoins Madras. Cultivation in Bombay may be said to be confined to the Deccan and the Karnatik, with Sholapur and Satara, lying just north of the Madras Presidency, as the most important districts.

"According to the latest official figures for the 1915-16 pea-nut crop, the total area in British India was 1,935,000 acres, as compared with 2,413,000 acres in 1914-15, and the total yield for 1915-16 was 1,011,000 tons of nuts in shell, as against 917,000 tons for the preceding year. The area in the Madras Presidency was 1,141,000 acres, and the yield 633,000 tons; in the Bombay Presidency, 232,000 acres with a yield of 275,000 tons; and in Burma, 262,000 acres and 103,000 tons.

"Exports from ports in the Madras Presidency amounted to 115 200 tons in 1914-15, and 151,236 tons in 1915-16, the principal ports of shipment in the latter year being Madras, Calcutta, Negapatam, and Porto Novo. Four-fifths of the total exports were consigned to Marseilles, the remainder going mainly to Calcutta, Burma, the Straits Settlements and Ceylon. Practically all the exports to Europe are of hulled seed.

"It appears from a report by the United States Consul at Madras that, in addition to the amount exported from the ports in the Presidency, a large quantity of the product grown in the Madras area is shipped from the French seaport Pondicherry, 150 miles south of Madras on the Coromandel Coast. The industry in India is said to owe its origin partly to this French Colony, which apparently began to cultivate the pea-nut on a large commercial scale at the suggestion of soap manufacturers in Marseilles As the Pondicherry settlement is small in area, 113 miles in all, the output of pea-nuts is not considerable in comparison with the adjoining British Provinces, part of whose crop thus finds a ready market close at hand.

"At first Pondicherry was practically the only port in India that exported pea-nuts, but now Madras, Bombay, and the other ports mentioned rival it in importance Madras has lately greatly increased its share of the traffic as the result of its improved railway connections with producing districts in the Deccan, and by reason of the facilities by the Port Trust of Madras for the storage and drying of the product in harbour warehouses, and for quick and cheap handling between sheds and steamers. Exports from Pondicherry in 1915-16 amounted to 42,238 tons, 475,000 bags (of 166 lbs.) of kernels and 91,000 bags of pea-nuts in the husk.

"The pea-nut crop is now a profitable one in the Madras Presidency, but it has gone through precarious times as the result of the use of inferior seed by the cultivators, the deterioration of the crop by too frequent use of the land with consequent exhaustion of the soil, the attacks of fungoid disease or pests, the irregularity in the water supply, and finally, although not the least important from the commercial side, the deleterious methods in preparing the kernels for the market. The agricultural authorities and commercial interests have been endeavouring to effect improvements, and a good deal of progress has no doubt been made in some directions. As regards the quality and outturn of the crop, officers of the Department of Agriculture, after investigating various methods of cultivation, have published the results with recommendations for the farmers.

" The Indian pea-nut originally was grown as an edible nut, but the great importance of the crop in South India now is due entirely to the growth of the seed crushing industry both locally and abroad, and all efforts to improve the stock are with the view of increasing its oil-yielding property. The pea-nut now chiefly grown in the Presidency is known as the ' Mauritius ' variety."

" Although the Madras crop owes its chief commercial value to the fact that a large part of it is bought for the French market, yet a good portion of the seeds are used in expressing oil in the local native mills. This industry, which appears to be increasing, is being encouraged by the authorities with a view to accustoming the people of the country to put their raw material through as many processes of manufacture themselves as they have facilities for. The bulk of the Indian manufacture of pea-nut oil is in the hands of the owners of ordinary native pestle and mortar pattern rotary mills. At Valavapur there are said to be 70 such mills, at Panruti 200 mills, and at Pondicherry there were formerly 200 mills.

" Mills of European pattern were tried at Pondicherry and at Cuddalore, but it was found that they could not compete successfully with the native mills. It is said that the oil expressed in the first pressing by the European mills was good, but that that obtained from the second pressing was dark, and consequently rejected in the European markets. The cake, being dry, wanting in oil, and powdery, was also rejected. So economically are the oil mills worked in Marseilles, that pea-nut oil is cheaper in France than it is in South Arcot. The seed produced on unirrigated land is more oily than that raised on irrigated land.

" In 1915-16 shipments of pea-nut oil from Madras ports were 262,641 gallons, valued at £27,800. One of the chief markets for the South Indian pea-nut oil is Burma. Shipments of oil to Calcutta have fallen off as a result of the opening of oil mills there, but the traffic in the nuts has correspondingly increased. Locally, the oil is extensively used in cookery. As an illuminant it is now recognised as having but a feeble power. It is sometimes employed for adulteration of gingeli (sasame) oil and coconut oil. The oil is also used in tanning leather. At Panruti and near Pondicherry, as also in Europe, it is employed in the preparation of a red dye from the Morinda citrifolia. The oil-cake—the residue of the seeds after pressing—is largely used by native farmers as a cattle food, and as a manure for paddy, sugar cane, and plantains. In France, where the oil-pressing industry is highly developed, the oil is used as a salad oil for cooking purposes, in canning sardines, in the preparation of margarine and in manufacture of white soap."

There are a few station to station rates charged on Ground-nuts by the South Indian Railway, but there are some discrepancies in the fixing of rates for Ground-nuts. For instance, the rate from Arkonam to Cuddalore O. T.—132 miles—is Re. 0-2-1 per maund (3 pies terminal included), whereas a rate of Re. 0-1-1 per maund is charged from Panruti to Cuddalore for a distance of only 17 miles, the former rate is a little less than double of the latter, but the distance is more than eight times. Similarly, the rate from Tindivanam to Pondicherry, distance 47 miles, is Re. 0-2-2 per maund, whereas the rate charged for Pallur to Pondicherry, 118 miles, is Re. 0-2-1 per maund, an anomaly.

Railway rates for oil-seeds.

The rates charged by the other railways on oil-seeds need not be discussed here, as the remarks regarding rates, made in the chapter on Wheat, apply to that of oil-seeds also, because the rates for wheat and for oil-seeds are the same.*

Oil crushing mills have sprung up in several parts of India, of which the most prominent are those at the ports and at places like Cawnpore, Lahore, etc. The point is whether the following factors do or do not operate against the rapid growth of oil-milling industry in India :—

Effect of present rates for oil and oil seeds on oil crushing industry of India.

(*a*) The flow of seeds out of India, encouraged by low export rates.

(*b*) The Railway rates for oil-seeds for crushing in the local mills at places like Cawnpore, Lahore, etc., being comparatively on a high basis, due to short leads, the tendency is to discourage milling at the oil-seed producing centres and to encourage exports and milling of seeds at the ports, thus depriving the producing centres of—

(1) employment of labour in the mills,
(2) oil-cake, and
(3) the profit in producing oil.

Although the Railway gets a good traffic in oil-seeds for long leads Mr. Silver, the late Director of Industries of United Provinces, has shown that it is to the detriment of the interests of the province, in which seeds are produced, to export them in their raw state.

(*c*) The scales of rates of the various railways shown in the chapter on "Wheat," which apply to oil-seeds as well, indicate clearly that on certain railways the short distance rates are high.

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* Oil-seeds are despatched almost from the same stations as despatch wheat, and the wheat rates—both for internal and export traffic – given on pages 310 to 334, apply equally to oil-seeds.

(*d*) The maximum rates and high terminals or special terminals, say on the East Indian Railway for instance, operate against the levy of low rates to Cawnpore, Agra, etc. The terminals are special terminals, as they apply to and *viâ* the junctions with the western lines. The terminals are thus levied on traffic *viâ* the junctions as well as to the junctions themselves (such as Cawnpore, Agra) and have the effect of increasing the rates for oil-seeds and wheat to say Cawnpore, Agra etc., required by the mills there.

(*e*) Whether or not the rates for oil should be made lower than they are at present. The difference between the rates for oil-seeds and oil is perhaps all right from the point of view of difference in the prices, but whether the present rates prevent free milling of oil at the oil-seed producing centres and encourage export of oil-seeds to the ports is an important question and requires sifting enquiry.

(*f*) The oil-cake rates are low enough when booked locally over one railway, although, for instance (as shown in the chapter on "Through rates") the rates of the Bombay, Baroda and Central India Railway for oil-cake are higher, distance for distance, than those of the East Indian Railway. Also when the traffic is carried over more than one railway the rates become high as shown also in the same chapter, *viz.*, that on "Through rates."

(*g*) Whereas the railway rates for oil-seeds vary between ⅓rd and ⅛th pie per maund per mile, the rates for oil generally are higher, for the most part "class rate;" ⅓rd pie rate is the average for vegetable oils whereas ⅙th to ⅛th pie rates are levied for oil-seeds carried for long distances. Some railways, for instance the East Indian Railway, have special rates for oil from Cawnpore to Calcutta, but low rates for oil carried for long distances are not at all so common as the low rates for oil-seeds.

CHAPTER XV.

SUGAR.

Gur, most common form of raw sugar into which a greater part of the sugarcane juice produced in the country is ordinarily converted, is an important article of food and is very much in demand by the poorer classes. India produces a very large quantity of sugarcane, but during recent years she has imported sugar from other countries, due principally to the cost of foreign sugar being cheaper.

Position of sugar industry of India.

Whereas during the period 1902-03 to 1910-11, there was a steady decline in the price of imported sugar due to competition with foreign markets and improved methods of cultivation of sugarcane in foreign countries the price of the indigenous production, specially that of gur, the consumption of which is the heaviest, has been on the rise.

India's production of sugar as compared with the production of other countries is hampered by the small and scattered nature of sugarcane cultivation, but yet in 1910 out of 8,928,000 tons of world's production of cane sugar, India produced 2,506,000 tons, or more than ¼th.*

The next highest figures were those of Cuba and Java, which were respectively 1,900,000 and 1,175,000 tons, but it is to be remarked that whereas the annual average for the five years ending 1899 was 2,767,000 tons for India, that for Cuba and Java were but 286,000 and 609,000 tons respectively. Between 1899 and 1910, the figures of Cuba and Java rose to 1,900,000 tons and 1,175,000 tons while that for India came down from 2,767,000 tons to 2,506,000 tons

The following was the distribution of sugarcane area between the various provinces of India during 1910-11 and the outturn of each province has also been shown, and it will be observed therefrom that the United Provinces of Agra and Oudh accounted for more than 46 per cent. in both cases :—

Province	Area under cultivation	Outturn
	Acres	Maunds
Assam	37,030	775,000
Bengal	244,000	9,255,000
Chota Nagpur	29,000	799,000

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* In India the only article of food stuff imported is Sugar and, therefore, the prices have gone down with large imports whereas India produces 9 tons of clean cane per acre, Java produces 40 tons.

Local out-turn and imports of sugar.

Province.	Area under cultivation.	Outturn.
Behar	212,000	7,044,000
Agra Provinces, East	283,000	8,807,000
Bundelkhand	1,000	22,000
Agra Provinces, North and West including Oudh	762,000	23,225,000
Punjab, East	375,000	6,916,000
Punjab, West	43,000	652,000
Sind	1,000	193,000
Gujarat	1,000	258,000
Konkan	4,000	278,000
Deccan	19,000	3,357,000
Berar	1,000	35,000
Central Provinces	24,000	800,000
Madras	95,000	5,742,000
	2,149,000	68,218,000

Sugar is an article of diet well suited to the Indians and the cultivation of sugarcane crop on an extensive scale is to the benefit of India in the interests of both its agricultural and industrial development; but, as already remarked, owing to the scattered nature of the sugarcane fields in this country the development of Indian sugar industry has not been able to keep pace with the increase in the productions of other nations. The improved method of sugarcane cultivation is attracting the attention of the Government and need not be referred to in detail here. But it will nevertheless be useful to show, side by side, the acreage under cultivation of sugarcane year by year during the period 1900-01 to 1910-11, and the imports of sugar during the same period.

It will be seen that while area under cultivation and out-turn have come down, the imports have considerably risen. Sugar is also manufactured from date palm in Bengal.

	Area under cultivation	Outturn.	Imports of sugar.
	Acres.	Maunds.	Maunds.
1900-01	2,446,000	74,729,000	7,120,700
1901-02	2,467,000	70,545,000	8,010,900

—	Area under cultivation.	Outturn.	Imports of sugar.
1902-03	2,358,000	66,610,000	7,230,000
1903-04	2,281,000	69,978,000	8,455,050
1904-05	2,411,000	74,315,000	9,201,600
1905-06	2,240,000	65,446,000	10,866,150
1906-07	2,428,000	73,278,000	14,697,450
1907-08	2,651,000	64,450,000	14,878,350
1908-09	2,198,000	56,246,000	16,097,400
1909-10	2,142,000	65,181,000	16,718,400
1910-11	2,149,000	68,218,000	10,442,700

It is remarkable that the heavy imports of Java sugar commenced from the same time, as the competition between railways (1905) had the effect of reducing the railway rates from the ports to the interior. The rates from the ports have now been raised and the East Indian Railway new scale of rates for sugar from Calcutta is higher than the scale rate for sugar and jaggery booked to and from other places. But the scale for both sugar and jaggery are the same.*

The following were the retail prices of sugar and gur at different ports during 1912 :—

	Per maund. Rs.	A.	P.
Calcutta—			
Sugar, ordinary	10	12	3
Gur	5	2	0
Bombay			
Sugar, ordinary	10	6	3
Jaggery (gur)	9	5	6
Karachi—			
Sugar	10	2	3
Gur	8	14	0
Madras—			
Sugar	10	13	4
Jaggery (gur)	7	8	0

There is a margin of difference between sugar and jaggery prices but some railways quote lower special rate for imported sugar while others charge both sugar and gur (jaggery) at the same scale of rates.

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* Also see remarks on pages 229 to 232.

The weight and the earnings of the sugar and jaggery traffic carried by different railways from 1908 to 1911 are given below :—

Sugar (Refined).

	1908.		1909.		1910.		1911.	
	Weight.	Earnings	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs	Tons.	Rs.	Tons.	Rs.	Tons	Rs.
Eastern Bengal Railway.	21,580	1,68,085	21,964	1,59,067	23,908	1,82,202	22,989	1,79,215
East Indian Railway.	83,619	9,25,871	70,804	8,20,936	86,820	11,13,054	72,014	8,44,621
Bengal Nagpur Railway	18,881	1,33,488	16,719	1,24,603	19,672	1,67,845	16,807	1,37,934
Madras and Southern Mahratta Railway	20,180	1,53,681	25,963	2,15,117	21,871	1,59,973	22,118	1,63,988
South Indian Railway.	19,765	1,01,711	18,714	1,12,981	21,443	1,21,818	21,500	1,17,087
Great Indian Peninsula Railway.	80,230	10,97,058	76,200	9,80,781	85,929	10,64,800	81,898	9,68,651
Bombay, Baroda and Central India Railway	42,798	4,87,957	40,268	4,86,597	46,381	5,61,172	43,992	5,60,661
Oudh and Rohilkhund Railway.	22,045	1,29,022	25,366	1,61,062	24,155	1,74,043	28,012	1,81,52
Bengal and North-Western Railway.	10,544	64,307	10,765	67,019	10,068	61,412	12,992	78,95
Rohilkhund and Kumaon Railway.	4,536	9,476	5,127	15,716	5,242	17,159	8,104	25,70
North Western Railway.	123,656	23,55,571	107,943	20,18,717	110,867	20,99,824	114,840	22,50,90

Sugar (Unrefined).

Eastern Bengal Railway.	18,183	99,348	17,637	21,951	19,277	1,05,007	18,787	1.01,57
East Indian Railway.	69,970	6,52,762	97,981	8,62,007	99,725	6,91,194	103,155	8,90,89
Bengal Nagpur Railway.	..	..	.	.	3,714	36,788	3,302	36,62
Madras and Southern Mahratta Railway.	9,022	67,875	3,287	46,688	11,638	1,02,386	7,990	66,01
South Indian Railway.	6,907	33,061	4,653	21,820	3,269	16,527	5,213	22,52
Great Indian Peninsula Railway.	3,439	22,792	3,570	23,888	6,948	44,659	7,165	52,09
Bombay, Baroda and Central India Railway.	1,786	16,034	3,650	31,950	4,939	41,138	4,152	46,98
Oudh and Rohilkhund Railway.	48,609	2,46,615	40,984	1,98,728	55,035	2,85,315	52,059	2,63,67
Bengal and North-Western Railway.	51,773	3,28,545	29,428	1,71,117	34,897	1,91,759	43,858	2,78,46

Sugar (Unrefined)—contd.

—	1908		1909		1910		1911.	
	Weight	Earnings	Weight	Earnings	Weight	Earnings	Weight	Earnings.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Rohilkhund and Kumaon Railway.	7,860	24,011	6,880	19,293	9,760	28,546	9,658	33,442
North Western Railway.	32,298	2,64,318	40,600	5,03,736	40,702	3,78,275	49,323	3,86,365

Sugar (Gur, rab, and jaggery, etc.)

	1908		1909		1910		1911.	
Eastern Bengal Railway.	37,401	1,69,645	36,540	1,69,600	43,854	2,01,182	42,251	2,00,710
East Indian Railway.	125,797	5,91,055	144,823	6,07,771	173,252	7,08,231	170,322	7,41,357
Bengal Nagpur Railway.	17,932	1,30,797	27,704	2,00,351	18,796	1,22,751	18,863	1,25,596
Madras and Southern Mahratta Railway	103,331	5,99,994	91,023	6,31,614	95,919	6,51,898	85,202	6,60,488
South Indian Railway.	57,629	3,12,295	48,655	2,92,440	48,470	3,07,192	50,645	3,12,086
Great Indian Peninsula Railway	93,267	7,04,962	94,257	7,07,649	101,338	8,26,861	103,782	9,44,357
Bombay, Baroda and Central India Railway.	57,042	3,59,712	35,501	3,31,138	41,394	3,63,932	42,609	3,44,419
Oudh and Rohilkhund Railway.	70,521	3,01,432	52,382	1,87,064	57,087	2,65,635	62,634	2,59,823
Bengal and North-Western Railway	114,159	6,24,496	69,936	3,51,235	74,841	3,95,788	93,374	4,98,534
Rohilkhund and Kumaon Railway	15,595	62,960	17,591	74,569	16,276	60,470	17,895	79,385
North Western Railway.	111,543	7,33,113	139,278	8,66,965	164,999	10,03,120	140,392	7,67,864

The East Indian Railway scale rates for sugar is as follows:—

	For sugar and jagree other than to and from Calcutta.	For sugar and jagree from Calcutta.
	Pie per maund	per mile.
For first—		
250 miles	·25	·27
251 to 350 miles	·20	·22
351 to 450 „	·18	·20
451 to 650 „	·16	·18
Above 650 „	·15	·17

It pays better (rather it costs less) to carry traffic to Calcutta than from Calcutta, but in certain cases the rates for the imported sugar from Calcutta are less, for instance, the special rate for sugar on actual weight from Howrah to Manikpur is Re. 0-9-10 per maund, whereas the special scale rate for jaggery between Manikpur and Howrah is Re. 0-9-11 per maund, subject to consignment of 270 maunds.

Similarly, while the special rate for sugar on actual weight from Howrah to Sutna is Re. 0-8-11 per maund, whereas the scale rate is Re. 0-10-7.

The Great Indian Peninsula Railway quote some low special rates for imported sugar as compared with the rates for indigenous production as the following illustration will show :—

Mileage.		Rate per maund for sugar on actual weight.
		Rs. A. P.
614	Bombay to Jubbulpur (Madan-Mohal) . .	0 8 10

The Bombay traffic is in refined sugar which consists principally of the imported article.

527	Cawnpore to Madan-Mohal . . .	0 15 0

The traffic from Cawnpore is in country produce and the rate of Re. 0-15-0 applies to both sugar and jagree and is nearly double that of the rate for imported sugar although the lead is shorter for the country produce than in the case of the imported article.

Even there is disparity in some of the special quotations from Cawnpore in that the charges for the lesser distance are higher than for greater ones—

Mileage.		Rate per maund for sugar on actual weight.	
		A.	P.
423	Cawnpore to Harda	12	0
448	Cawnpore to Gadarvada	9	9
466	Cawnpore to Kareli	9	2
476	Cawnpore to Narsingpur	9	0
485	Cawnpore to Karakbel	8	6
495	Cawnpore to Gotegaon	8	2
486	Cawnpore to Khandwa	13	8

These are all stations on the same line and in the same direction (*viz.*, on the Jubbulpore-Bhusaval Section of the Great Indian Peninsula Railway).

Cawnpore is a sugar and jaggery mart and has sugar factories. Ordinarily, sugar is charged ⅓rd pie, but when carried over distances of 650 and 900 miles the rates are ¼th and ⅕th pie respectively, subject to the differential rule.

The Bombay, Baroda and Central India Railway sugar traffic is principally from Bombay and the following are some of the stations where sugar is largely booked to :—

Mileage to Bombay.	Name of station.	Rate per maund.			Weight in tons.
		Rs.	A.	P.	
165	Surat	0	5	1	2,759
246	Baroda	0	7	4	1,899
308	Ahmedabad	0	8	11	7,942
202	Broach	0	5	1	607
163	*Viâ* Kankra Khari	0	4	9	2,388
432	*Viâ* Nagda	0	12	6	2,036
775	*Viâ* Muttra	0	15	1	1,005

The Bombay, Baroda and Central India Railway rate is ordinarily $\frac{1}{4}$th pie per maund per mile for both sugar and jagree.

As regards imported sugar traffic on the North Western Railway, the heaviest bookings are from Karachi, while Calcutta and Bombay also send sugar to stations adjacent to junctions such as Ghaziabad, Delhi, Amballa Cantonment, Kalka, Kot Kapura. The name of the principal sugar receiving stations on the North Western Railway are given below, and the rates charged from Karachi to those stations are also shewn :—

Mileage from Karachi.	Name of station.	Weight. maunds.	Rate per maund.		
			Rs.	A.	P.
786	Amritsar	202,546	1	0	8
576	Multan City	200,909	0	12	3
575	„ Cantonment	..	0	12	3
929	Peshawar City	95,627	1	3	7
931	„ Cantonment	..	1	3	8
933	Muzaffarnagar	134,138	0	15	8
802	Jullundur City	106,490	1	1	1
299	Sukkur Mani	72,460	0	6	6
897	Rawalpindi	83,036	1	2	11
755	Lahore	94,347	1	0	0
897	Saharanpur	48,144	0	15	5
842	Amballa City	45,926	1	0	4
847	„ Cantonment	..	1	0	1

It will be observed from the above statement that while the rate from Kurachee to Amritsar for 786 miles on a large volume of traffic, *viz.*, 202,546 maunds, is Rs. 1-0-8, the rate to Muzaffarnagar for 933 miles is Re. 0-15-8, on a lesser volume of traffic, *viz.*, 134,138 maunds. Similarly there are disparities between the Saharanpur rate and the rates for Lahore or Umballa City. Besides, when the traffic is for North Western Railway stations from the Calcutta or Bombay port the following block rate is levied, as will be seen from page 330 of North Western Railway Goods Tariff Pamphlet No. 1 of 1917 :—

" Sugar booked *viá* any North Western Railway junction (for traffic, from Bombay and Howrah which includes Sealdah, Chitpur and *viá* Cossipur Road, etc.) to any North Western Railway stations and *viá* will be charged at 1st class rate, no other rate applying."

While the Oudh and Rohilkhand Railway scale rates for both sugar and jagree are the same the North Western Railway, which carries the heaviest traffic, charges sugar and jagree in small lots at ¼ pie per maund per mile, but jagree in wagon loads at owner's risk is charged ⅙ pie per maund per mile.

The Oudh and Rohilkhand Railway inward traffic of sugar is largely from Calcutta, but stations nearer Saharanpur, such as Nagina, Najibabad, Roorkee, receive sugar *viá* Saharanpur, from Kurachee.

Despatches from Calcutta viâ *Moghalserai.*

Mileage from Moghalserai.	Name of station	Rate per maund from *viá* Moghalserai.		Maunds.
		A.	P.	
10	Kashi	0	4	47,294
114	Sultanpur	2	8	13,866
149	Rai-Bareli	3	3	13,949
197	Lucknow	3	11	103,742
130	Fyzabad	2	11	13,233
192	Bara Banki	3	11	34,013
261	Hardoi	7	4	20,658
290	Shahjahanpur	7	4	12,397
343	Bareilly	7	8	27,973
382	Rampur	7	8	16,660
387	Chandausi	7	3	19,120
399	Moradabad	7	8	37,395
46	Jaunpur City	2	0	8,601
154	Rudauli	3	7	7,109

These are all the Oudh and Rohilkhand Railway proportions of the special through rates quoted from Howrah on traffic in small lots (actual weight). There were also bookings from Rosa where there are sugar works, and in 1911, the despatches from Rosa to the following stations were :—

Mileage from Rosa.	Name of station.	Rate per maund.		Weight of traffic in maunds.
		A.	P.	
98	Lucknow	3	3	1,400
142	Cawnpore	3	3	1,045
49	Bareilly	2	1	1,060
188	Meerut City	3	8	1,490
223	*Via* Allahabad	4	3	1,767
142	,, Cawnpore	3	3	1,117
153	,, Aligarh	3	3	1,364
192	,, Ghaziabad	3	8	2,303
49	,, Bareilly	2	1	1,363
225	,, Saharanpur	3	1	19,719

There is also good quantity of unrefined sugar or jaggery traffic on the Oudh and Rohilkhand Railway and the principal despatches were from the following stations :—

	Maunds.
Via Moghalserai	318,012
,, Bara Banki	189,465
,, Benares	214,695
Nagina	160,451
Muazzampur Narain	122,168
Bareilly	89,003
Badshahpur	53,167
Shahganj	30,848
Akbarpur	30,694
Goshainganj	24,068
Fyzabad	86,722
Barabanki	53,916
Alamnagar	252,036
Shahjahanpur	43,219
Sitapur City	21,318
Tilhar	84,461
Chandausi	64,735
Gajroula	72,394
Hapur	80,308
Khanth	59,278
Dhampur	458,133

The Oudh and Rohilkhand Railway rates for sugar and jagree are based on the following scale of rates :—

⅓ pie per maund per mile up to 166 miles.
⅕ pie per maund per mile from 167 to 288 miles.
⅙ pie per maund per mile over 288 miles.

For full wagon load the rate is 3 annas per wagon per mile.

The total weight of the inward refined sugar traffic on the Bengal and North-Western Railway was 353,629 maunds, of which *viâ* Mokameh traffic accounted for 201,088 maunds, which was principally in imported sugar from Calcutta.

The principal sugar receiving stations on the Bengal and North-Western Railway during 1911 were :—

Mileage from Mokameh.	Name of station.	Rate per maund. A. P.	Weight of traffic in maunds.
119	Daronda	3 1	29,531
204	Gorakpur	4 10	9,180
130	Saran	3 4	8,990
92	Chupra	2 6	10,012
336	Bahraich	7 2	7,512
60	Darbhanga	1 10	14,155
69	Muzaffarpur	2 1	10,230
149	Raxul	3 9	5,997
145	Bettiah	3 8	7,546
102	Sitamarhi	2 9	13,989
243	Basti	5 8	8,397

The question whether imported sugar, having regard to the factor of its cheap production, requires special low rates at all is very doubtful and has been discussed in chapter V.* The following are the list of sugar factories run under improved methods :—

Bengal –	
24-Parganas	Cossipur Sugar Works, Cossipur.
Behar and Orissa—	
Shahabad	Behea Sugarcane Mill. Sugar, oil pressing, Nasriganj.
Champaran	Pursa Sugar Works. Champaran Sugar Works.
Saran	Maharaj Desi Sugar Works, Ltd., Siwan. Marhaurah Sugar Factory.
Muzaffarpur	Sugar works at Otter. Private sugar factory, Japaha.

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* Pages 230 to 232.

United Provinces of Agra and Oudh—	
Pilibit	L. H. Pros. sugar factory.
Shahjahanpur . . .	Rosa sugar works and distillery of Carew Co., Ltd.
Cawnpore . . .	Sugar Works Company, Ltd. Indian Union Sugar Mills. Baijnath Jugilalls sugar factory.
Gorakhpur . . .	Partabpore English Sugar Factory, Chapra, Dabauli.
Punjab—	
Gurdaspur . . .	Punjab Sugar Works and Patent Carbonic Acid Gas Company, Shuganpore.
Amritsar . . .	Har Kishen sugar works.
Madras—	
Ganjam . . .	Sugar works distillery and aerated water manufacturing, Aska
Godaveri . . .	Deccan Sugar and Abkari Company, Ltd., Semalkotta.
South Arcot . . .	East Indian distilleries and sugar factories, Ltd., Nellikuppam.
Tinnevelly . . .	East India distillery and sugar factory, Kulasekarapatnam. A. R. A. R. S. M. sugar mill, Thachanallur.

Note.—It may be interesting to know how the sugar and jagree traffic of Indian Railways fluctuated during 1916-17, when the imported traffic was not so much in competition with the country produce.

In Calcutta, there were of course large stocks of Java sugar; therefore the East Indian Railway did a good traffic to the extent of 13½ lacs of maunds in refined sugar. Country sugar (both sugar and jagree) was also despatched largely from the United Provinces and Behar, such as from Luckeeserai, Gya, Dighaghat, Bihta, Cawnpore, etc., the total weight of which was 6,673,000 maunds.

The Great Indian Peninsula Railway despatched about 10 lacs of maunds of sugar from Bombay (both imported and country sugar). Country sugar was despatched largely from Poona, Kopergaon, from the Southern Maharatta country *via* Poona, *via* Dhond from the Dhond Baramati Railway, and carried for both long and short distances over the Great Indian Peninsula Railway. These few places accounted for not less than 15½ lacs of maunds. Considerable amount of traffic in jagree was received on the Great Indian Peninsula Railway from the United Provinces *via* Cawnpore, *via* Delhi and *via* Manikpur.

The Bombay, Baroda and Central India Railway also sent 17 lacs of maunds of sugar from Bombay.

The North-Western Railway dealt with about 23½ lacs of maunds, but of this quantity nearly 17 lacs of maunds were from Karachi consisting of sugar mostly imported, and about 284,000 maunds of Java sugar were received at North-Western Railway stations from Calcutta.

Apart from more than 6 lacs of maunds of traffic in refined sugar, most of which was from Calcutta, the Oudh and Rohilkhand Railway carried locally produced sugar and jagree traffic to the extent of over 33 lacs of maunds, and similarly, owing to good production in United Provinces and Behar the Bengal and North-Western Railway dealt with more than 50 lacs of maunds of sugar and jagree.

The Madras and Southern Maharatta and the South Indian Railways dealt with a large traffic too. Despatches from Kolhapur, Samalkot, Hospet, etc., were large, Kolhapur alone accounting for over 5½ lacs of maunds. The South Indian Railway traffic to and from the sugar factories at Nellikupam and Tinnevelly was also large.

The Eastern Bengal State Railway dealt with about 9 lacs of maunds of sugar and jagree, of which a portion was date sugar and date jagree.

CHAPTER XVI.

IRON.

Early iron industry.

The iron industry of India can be traced to pre-historic days. The indigenous industry for the manufacture of iron still persists in various parts of India, particularly in the Central Provinces, where the Indian manufactories, run under old Indian methods, are on the increase. Sugar cane crushing mills, pipes, cast iron railings, garden seats, etc., have been largely in demand during recent years and can be made well and cheaply in this country. The methods and tools used in these factories are, in many cases, of European type but the workmen are all Indians. The main business of the village smiths is, however, to make plough shares and other implements of agriculture, as well as cooking utensils and other articles in every day use.

Although iron ores are found in several parts of India the iron used in many such black smith shops consisted, in the past, of imported bars and sheets, a good deal of which was Belgian, and cheap German steel was also used. But it will be interesting to know what has been done in India in regard to establishment of founderies and pig iron works under European methods; one can do no better than quote the following extracts from the 'Records of the Geological Survey of India, Volume XLVI, 1915.'

"Iron smelting was at one time a widespread industry in India, and there is hardly a district away from the great alluvial tracts of the Indus, Ganges, and Brahmaputra, in which slag-heaps are not found. For the primitive iron smelter finds no difficulty in obtaining sufficient supplies of ore from deposits that no European iron-master would regard as worth his serious consideration. Sometimes he will break up small friable bits of quartz-iron ore schist, concentrating the ore by winnowing the crushed materials in the wind or by washing in a stream. Sometimes he is content with ferruginous laterites, or even with the small granules formed by the concentration of the rusty cement in ancient sandstones. In ancient times the people of India seem to have acquired a fame for metallurgical skill, and the reputation of the famous wootz steel, which was certainly made in India long before the Christian era, has probably contributed to the general impression that the country is rich in iron-ore of a high class type. It is true throughout the Peninsula, which is so largely occupied by ancient crystalline rocks, quartz-hematite and quartz-magnetite schists are very common in the Dharwarian system, the system of rocks that lithologically, as well as in stratigraphical relationship corresponds approximately to the Lower Huronian of America. But most of these occurrences consist of quartz and iron ore so intimately blended that only a highly siliceous ore of a low grade can be obtained without artificial concentration. These occurrences of quartz-iron-ore schist are so common in India that newly recorded instances are generally passed over as matters of very little immediate economic interest. During the past few years, however, distinct ore-bodies of considerable size and richness have been recognised in the Central Provinces and in the Mayurbhanj State."

"Earlier attempts to introduce European processes for the manufacture of pig-iron and steel, in India, had been such conspicuous failures that there was naturally some hesitation in reposing confidence in the project launched by Messrs. Tata, Sons and Company. Perhaps the earliest attempt to introduce European processes was due to the enthusiasm of Mr. Josiah Marshall Heath of the Madras Civil Service, who, having resigned the service of the East India Company, obtained the exclusive privilege of manufacturing iron on a large scale in the Madras Presidency. In 1830, trial works were erected at Porto Novo in the South Arcot district, and were maintained by subsequent financial assistance from the East India Company. The business was taken over in 1833 by the Porto Novo Steel and Iron Company, and additional works were started at Beypur on the Malabar Coast. Various concessions were granted to Mr. Heath and the succeeding Iron Company, but in spite of these, the undertaking proved to be a failure. In 1853, a new Association, known as the East India Iron Company, was started with a capital of £400,000. This Company obtained various concessions from Government, and erected two blast furnaces, one in the South Arcot district, and another on the Cauvery river, in the Coimbatore district. These furnaces were stopped in 1858, whilst operations at Porto Novo ceased in 1866, and at Beypur in 1867. Other attempts to introduce European processes have been made in the Birbhum district of Chota Nagpur and at Kaladhungi in Kumaon. But the only scheme which proved to be a financial success is that now in operation near Barakar in Bengal. Even the Barakar Iron works passed through various vicissitudes of fortune, and showed no signs of financial success until they were taken over by the present Managing Agents, Messrs. Martin & Co."

The following are figures of iron ore raised in Bengal and Bihar and Orissa during the years 1909-1913.

Iron ores in Bengal and Bihar.

YEAR	Burdwan	Singhbhum	Manbhum	Sambalpur	Mayurbhanj	TOTALS FOR BENGAL AND BIHAR AND ORISSA.		
						Quantity	Value	Value per ton.
	Tons.	Tons	Tons	Tons	Tons.	Tons	£	
1909 . . .	46,623	15 215	10,132	737		72,711	13,698	3 77
1910 . . .	24,387	17 646		620		42,653	6,618	3 10
1911 . . .	5,456	36,276		610	300,000	342,342	28,179	1 64
1912 .	9,882	83,425	.	608	471,232	565,147	43,087	1 52
1913 . .	8,926	98,196		666	247,025	354,813	35,582	2 00
AVERAGE .	19,055	50,152	.	648	339,419 (3 years)	275,533	25,433	1 85

Barakar Iron works.

" The Barakar Iron works were taken over by the present Company in 1889 and completely remodelled. There are now (1913) three blast furnaces in operation with daily productive capacity of 330 tons of pig-iron, but the output is restricted to very much less on account of the limited demand for pig-iron. During the five years under review the production of pig-iron has been as follows :—

	Tons.
1909	38,634
1910	35,933
1911	49,183
1912	58,883
1913	59,187

" The following are average analyses of the pig-iron produced :—

	Grades 1, 2, 3.	Foundry pig 3 and 4.
	Per cent.	Per cent.
Graphatic carbon	3·13	2·98
Combined	0·23	0·32
Silicon	2·99	2·26
Phosphorus	1·20	1·21
Manganese	1·40	1·13
Sulphur	0·022	0·03

" The iron foundries cover an area of 104,000 square feet, and include pipe-foundries, sleeper and chair foundries, as well as arrangements for miscellaneous castings. During the five years 1909-13 the production of castings was as follows :—

	Tons.
1909	12,216
1910	7,930
1911	14,500
1912	13,857
1913	17,536

" The site of the Barkar Iron works was originally chosen on account of the proximity of both coal and ore supplies. The outcrop of iron stone shales between the coal bearing Barakar and Raniganj stages stretches east and west from the works, and for many years the clay ironstone nodules obtainable from this formation formed the only supply of ore used in the blast furnaces."

" The ore from this formation as recently used gave the following analysis:—

	Per cent.
Iron	43·43
Silica	16·44
Manganese	2·15
Phosphorus	0·86

" Recently, magnetite and hematite have been obtained from the Manbhum and Singhbhum districts, and the production from the last-named district has, during the quinquennium, largely replaced the supplies of ore hitherto obtained near the Iron-works. Finally, the Bengal Iron and Steel Company, Limited, have now given up the use of ores obtained from the neighbourhood of Barakar and Raniganj and are now obtaining their ores exclusively from the Kolhan Estate, Singhbhum. The deposits are known as Pansira Hill and Buda Hill situated about 12 miles and 8 miles south-east of Manharpur Station, Bengal Nagpur Railway. The total quantity of ore in these two deposits has been estimated to be about 10 million tons The ore shows an average analysis as follows :—

	Per cent.
Iron	64·00
Silica	3·00
Manganese	·06
Phosphorus	·05

" A 2′-6″ railway line has been constructed by the Bengal Iron and Steel Company, Limited, from Manharpur to the former deposit, as also an ærial ropeway capable of 50 tons hourly for transporting the ore from the top of Pansira Hill to the Light Railway at the foot. Since the use of this ore the quality of this Company's iron has shown very considerable improvement and is now said to be superior to any imported from Europe.

" The following table shows the quantity of ore used during the period under review :—

Iron ore used at the Barakar Iron works.

Year.	Statute Tons.
1909	77,971
1910	63,795
1911	67,653
1912	95,748
1913	96,230

Tata Iron works.

" The preliminary operations which led to the formation of the Tata Iron and Steel Company were inaugurated by the late Mr. J. N. Tata, and were carried on by his successors in the firm of Messrs. Tata Sons & Co., Ltd., Bombay. According to the prospectus, the vendors

receive the expenses of their preliminary operations, amounting to Rs. 5,25,000 paid (£35,000), *plus* Rs. 15,00,000 (£100,000) in ordinary shares, the cash for expenses being re-invested in shares *plus* an additional sum of Rs. 4,75,000 (£31,666). Messrs. Tata Sons & Co., also become the Managing Agents of the Company for the first period of eighteen years on consideration of a remuneration of 5 per cent. on the annual net profits, with a minimum remuneration of Rs. 50,000 (£3,333) commencing only from the 1st July 1910."

"The Company, which was registered on the 26th August 1907, with a nominal capital of Rs. 2,31,75,000 (£1,545,000) holds concessions for iron ore in the Mayurbhanj State of Orissa, and also near Dhullee, 38 miles south of Rajnandgaon in the Rajpur district of the Central Provinces, with smaller deposits in the Drug district. It also possesses a manganese ore property near Ramrama in the Balaghat district, Central Provinces, as well as deposits of limestones near Katni, dolomite in Gangpur, magnesite and chromite in Mysore, and coal in the Jherria field."

"The works are situated at Sakchi in the Singhbhum district to the north of Kalimati Railway Station, 153 miles from Calcutta, and at the junction of the Khorkai and Subarnarekha rivers, from which is drawn the water required for the works and the new town. The main elements consist of coke ovens, blast furnaces and blowers, electric power and pumping plants, foundry, steel plant, gas producers, rolling mills and bar mills, with the usual complement of machine shops, pattern shops, yards, etc. The coke-oven plant consisted in 1913 of 180 Coppée non-recovery ovens and 30 beehive ovens, producing altogether about 15,000 tons of coke monthly. This plant is being still further increased by the addition of a battery of bye-product recovery ovens, and the total output is expected to be ultimately over 800 tons a day."

"There are two blast furnaces, each 19 feet in diameter and 77 feet high, with Zoelly turbo-blowers. In 1913 they had attained a maximum monthly production of nearly 15,000 tons, which, however, could not be maintained until larger supplies of coke were made available. The steel plant consists of one 300 ton gas fired mixer, four 50 ton basic open hearth furnaces, and three gas fired soaking pits. Gas is obtained from a plant of sixteen Morgan mechanical gas producers.

"The rolling mill consists of one blooming mill, with rolls 80 inches long and 33 inches in diameter, and one 28-inch two-high reversing rail-mill with three stands of rolls. These are operated by an Ehrhardt and Sehmer three cylinder reversing engine, non-condensing, with cylinders 51⅝ inches × 51⅛ inches. The hot saw is placed in a separate building 300 feet from the centre of the rail mill, whence the rails are led to it by a line of rollers."

"The works were completed in 1911; the first blast furnace was blown in December 1911 and the second in September 1912. The first steel furnace was tapped early in 1912."

"Considerable difficulties were experienced at first in connection with the manufacture of steel; these, however, have now been overcome and the Government of India have placed a standing order with the works for 20,000 tons of steel rails annually for the Indian State railways; these rails are tested in a laboratory maintained by the Government of India at Sakchi under the supervision of a Government expert."

"The output of the works up to the end of the year 1913 is shown below:—

	Tons
Pig iron	231,925
Steel ingots	63,175
Blooms	53,015
Structural materials, beams, angles, channels and heavy rails	31,312
Bars, angles, channels, light rails and fish plates	6,491

"Although the Tata Iron and Steel Company possesses slightly richer and purer ore-bodies in the Raipur district, supplies of ore are at present drawn from the deposits in Mayurbhanj, which are nearer to the site of the works and to which the Bengal Nagpur Railway Company has built a branch line about 15 miles in length."

"The occurrence of valuable iron-ore deposits in Mayurbhanj was first noticed by P. N. Bose who mentioned the following occurrences:—

(*a*) Bemanghati sub-division—

1. Gurumaishini Hill, over an area of 8 square miles
2 Near Bandgaon in Saranda-pir.
3 Sulaipat Badampahar range from Kondadera to Jaidhanposi, a distance of some 12 miles

(*b*) Panchir sub-division—

At several places from Kamdabedi and Kantikna to Thakurmunda, a distance of 25 miles.

(*c*) Mayurbhanj proper—

Simlipahar range, and the sub-montane tract to the east (Gurguria, Kendua and Baldia)

"Subsequently, on the possibility of these ores being suitable for the proposed iron and steel works, they were re-examined by Messrs. C. P. Perin and C. M. Weld, who arranged for detailed prospecting operations after securing prospecting rights from His Highness the Maharajah. A subsequent examination of the ground by Mr. W. Selkirk having demonstrated the existence of sufficient ore to warrant operations on a large scale, a lease was granted to the Company over 20 square miles on a royalty scale that will work out to an average of 2.625*d.* per ton for the first thirty years and 5*d.* per ton for the next following thirty years on an annual output of 200,000 tons of ore."

"Prospecting operations determined the existence of over a dozen considerable deposits of high grade ore in the more accessible parts of the State. Of these deposits three namely, Gurumaishini, Okampad (Sulaipat), and Badampahar, so far overshadow the others that reference will be made in detail to them alone. The chief point of interest in connection with the smaller deposits is that in every case the nature or type of occurrence is practically identical with the great deposits, they being miniature reproductions as it were of the latter. As the main work of the prospectors has been devoted to the first necessary problem of determining the superficial disposition of the richer ore-bodies, very little has been done so far in the way of studying the geological relations and genesis of the ores."

"The ore-deposits have all been found to take the form of roughly lenticular leads or bodies of hematite, with small proportions of magnetite, in close association with granite on the one hand and granulitic rocks on the other. These latter have been noted in the field as charnockites, the term being employed, rather loosely no doubt, but probably in the main correctly, to cover types of pretty widely varying acidity."

But for the Tata Iron and Steel Works at Sakchi, railways in India would have been in a worse position than they are to-day in connection with the supply of their rails.

Low Railway rates for Tata Iron works and for Barakar Iron works.

Both the Bengal (Barakar) Iron and Steel Company and the Tata Iron works have received assistance from the railways not only in the matter of facilities of transport by the laying down by the railways of sidings, etc., but exceptionally low rates of freight have been granted by the Bengal railways, on whose lines the great works are situated. The concessions granted to the Tata Iron Works are as follows :—

"A reduced rate of $\frac{1}{10}$th pie per maund per mile, equivalent to ·15 of an anna per ton mile, on all materials and plant required for construction, and on all raw material to the works. This reduced rate also applies to all finished products and bye-products despatched for shipment from Calcutta."

Similar concession has also been granted to the Bengal (Barakar) Iron and Steel Company, Limited :—

"Subject to a minimum of 20-million ton miles per calendar year of all traffic over the East Indian Railway to and from Bengal Iron and Steel Company's works at Kulti, a rebate will be allowed on the carriage of raw materials from any station on the East Indian Railway to the steel works at Kulti for the manufacture of Iron and Steel of all kinds at the works, and for the carriage of their finished products and bye-products of the coking ovens sent from Kulti to Calcutta for shipment. The rebate will be arrived at by calculating the difference between the tariff rates and $\frac{1}{18}$th pie per maund per mile and will be granted on proportionate scale thus : if the ton-mileage is 20 millions, the rebate granted will be two-thirds of the differences, if the ton mileage is 20 millions the rebate will be ⅚th of the difference, if the ton-mileage is 30 millions or over the difference will be paid in full."

That there is yet scope for further development of iron works in India, under European methods, is apparent from the enormous quantity of iron annually imported into this country, as the following remarks from the Record of the Geological Survey of India, Volume XLVI, will show :—

Imports o iron good

"Except for the pig-iron and steel produced at Barakar and Sakchi (which amounted to 473,745 tons of pig-iron and 156,923 tons of steel during the period under review, as compared with a total of 209,595 tons of pig-iron produced at Barakar during the previous five years), practically all the iron and steel used in India is imported; the steel furnaces in the Government Ordnance Factories and in the East Indian Railway works at Jamalpur are supplied mostly with scrap steel and imported pig, while the iron produced by indigenous methods amounts to only about 1,000 tons a year. The imports of pig-iron averaged 13,130 tons a year during the past five years 1909 to 1913, as compared with an annual average of 30,974 tons during the previous five years. The requirements of the country in iron and steel are indicated by the import returns summarised in table below. From this it will be seen that the total value of the unfinished and finished iron and steel products imported into India fluctuated considerably, having ranged from a little over 15½ million pounds in 1910 to nearly 27 million in 1913, the average annual value being £19,330,918 as against £16,910,432 for the preceding quinquennium. A marked feature is the great increase in the imports of iron and steel beams, etc., in 1913."

Imports into India of Iron and Steel Materials during the years 1909-1913.

—	1909	1910	1911	1912	1913	AVERAGE
	£	£	£	£	£	£
Cutlery and Hardware.	2,015,228	2,115,635	2,351,355	2,566,315	3,006,101	2,410,027
Machinery and mill-work.	4,097,346	3,408,064	3,215,496	3,468,397	5,171,059	3,878,672
Railway plant and rolling stock.	6,254,536	3,654,743	7,627,259	5,132,718	8,622,887	5,718,435
Iron, bars, pig-iron, etc.	5,816,505	373,210	319,816	371,220	410,702	7,322,884
Iron and steel beams, sheets, pillars, rivets, etc.		5,183,019	5,209,401	5,985,542	8,028,182	
Steel bars, angle and channel, ingots, blooms, billets, etc.		940,558	1,154,503	1,028,338	1,694,495	
TOTAL .	18,183,515	15,675,229	16,997,860	18,852,560	26,945,429	19,330,918

The Iron and Steel traffic is generally carried from the ports to the interior provinces and enjoy the benefit of special rates at competitive centres, such as Cawnpore, Agra, Delhi, and Jubbulpore, etc.

But ordinarily iron articles, such as bars, beams, castings, columns, bolts, nuts, etc., which are commonly used in buildings, etc., are charged 1st class rate (or $\frac{1}{3}$rd pie per maund per mile or 9 pies per ton mile).

Statements are given on page 431 showing the traffic carried over the various railways during 1912-13 in—

(1) Iron bars, sheets, girders and other commercial forms of iron and steel.

(2) Machinery and mill work.

(3) Hardware and Cutlery.

(4) Metallic ores (which includes both iron and manganese ore).

Rates of principal railways for iron goods.

The rates for iron ore which are principally consumed by the Tata Iron Works and Barakar Iron Works have already been discussed and also the rates for articles manufactured by these works. The manganese ore rates will be found in the next chapter.

As already stated, iron articles, such as bars, sheets beams, bolts, etc., are charged 1st class whereas machinery is charged 2nd class at railway risk and 1st class at owner's risk, but machinery in full wagon loads is given the benefit of low rates and as the traffic is principally from the ports the rates of the East Indian Railway, Great Indian Peninsula Railway and the North Western Railway are given below :—

East Indian Railway.

Telescopic basis—	Pie per maund per mile.
For first 100 miles	3333
For extra distances above 100 miles to 450 miles	·17
For extra distances above 450 miles	·12

Great Indian Peninsula Railway.

Sliding scale— For distances—	
476 to 650 miles	·33
651 to 900 miles	·25
901 miles and above	·20

North-Western Railway.

Sliding scale— For distances—	
299 miles to 574 miles	[illegible]
575 miles to 899 miles	[illegible]
900 miles and beyond	[illegible]

Railway traffic in iron.

	IRON, BARS, SHEETS, GIRDERS AND OTHER COMMERCIAL FORMS OF IRON AND STEEL.				MACHINERY AND MILLWORK				HARDWARE AND CUTLERY.				METALLIC ORES.			
	1912		1913		1912		1913		1912		1913.		1912		1913.	
	Weight	Earnings	Weight	Earnings	Weight	Earn-ings	Weight	Earn-ings	Weight	Earn-ings	Weight	Earn-ings	Weight	Earn-ings	Weight.	Earn-ings.
	Tons	Rs	Tons	Rs	Tons	Rs	Tons	Rs	Tons	Rs	Tons	Rs.	Tons	Rs	Tons	Rs.
Eastern Bengal Railway.	73,677	4,76,150	117,424	7,6[illegible],386	4,902	39,525	7,270	58,286	18,852	1,77,916	21,589	2,01,454			.	..
Assam Bengal Railway.	14,097	65,2[illegible]	31,242	1,14,586	1,355	16,192	1,189	12,883	4,454	47,968	4,174	40,401		.	.	..
East Indian Railway.	69,886	7,77,433	88,356	9,79,902	10,410	1,25,744	14,659	1,88,817	23,865	3,16,400	42,996	5,01,432	2,307	3,747	2,087	4,776
Bengal Nagpur Railway.	20,069	2,62,091	36,326	[illegible]	5,856	49,444	4,157	47,901	6,738	98,503	8,064	1,22,219	869,402	12,74,692	1,065,391	18,30,816
Madras and Southern Mahratta Railway	32,309	2,93,242	42,327	2,98,0[illegible]	8,266	89,411	10,965	1,25,336	22,022	2,40,034	25,301	2,66,829	61,274	3,15,549	76,236	3,84,464
South Indian Railway.	24,385	1,69,310	22,161	1,14,104	6,523	52,047	5,669	63,312	10,870	1,32,808	12,853	1,45,188	7[illegible]	398	217	1,279
Nizam's Guaranteed State Railway	5,706	41,845	7,826	60,058	1,028	11,578	1,064	11,155	3,121	31,033	3,258	36,145				..
Great Indian Peninsula Railway.	87,193	11,32,701	69,225	13,16,431	12,751	1,90,875	15,053	2,91,481	20,071	3,45,455	22,986	3,76,765	469,321	34,77,544	560,338	41,94,931
Bombay, Borada and Central India Railway	43,194	3,68,259	56,333	7,72,295	9,034	1,24,951	15,814	2,16,870	7,387	1,04,695	9,845	1,34,563	69,028	2,87,268	56,572	2,32,672
Oudh and Rohilkhund Railway	13,178	79,533	15,813	98,164	1,228	11,021	1,063	10,829	10,951	77,801	11,211	75,794		.	.	..
Bengal and North-Western Railway.	10,272	58,349	12,934	79,158	1,159	8,267	1,861	11,520	6,773	47,860	7,572	54,207	3	33	6	37
Rohilkund and Kumaon Railway.	1,603	7,167	3,148	16,138	311	1,383	190	1,001	2,805	13,483	2,375	11,909	.	.	.	..
North Western Railway.	66,031	9,60,062	85,227	12,60,106	6,033	1,06,153	5,654	93,091	22,646	3,70,916	25,851	4,27,121	3,065	27,451	3,416	30,315

CHAPTER XVII.

MANGANESE ORE.

Manganese ore mines in India.

Manganese ore industry of India is growing into importance. The following from the Records of the Geological Survey of India, Volume XLVI, will show the progress of the manganese ore industry in this country as well as the companies working and the production for the years 1909-13.

"Most of the limited companies to work manganese ore mines were formed during the years 1905 to 1907; but the Vizianagram Mining Company was floated in 1895:—

Bombay—
1. The Shivrajpur Syndicate.
2. The Bamankua Manganese Company.

Central Provinces—
1. The Central India Mining Company.
2. The Indian Manganese Company.
3. The Central Provinces Prospecting Syndicate
4. The Netra Manganese Company.

Madras—
1. The General Sandur Mining Company.
2. The Bobbili Mining Company.

Mysore—
1. The Mysore Manganese Company, converted into—
   The Mysore Manganese Company, and absorbed by—
   The Workington Iron and Steel Company in 1909.
2. The Peninsular Minerals Company of Mysore.
3. The Shimoga Manganese Company.
4. The Hajee Prospecting Syndicate.

'Other prominent workers during this quinquennium have been—
The Carnegie Steel Company : Central Provinces.
The Tata Iron and Steel Company : Central Provinces.
Byramjee, Pestonjee and Company : Central Provinces.
D. Laxminarayan : Central Provinces.
Rai Bahadur Bansilal Abirchand Mining Syndicate : Central Provinces.
Madhulal Doogar : Bihar and Orissa.
Kiddle Reeve and Company : Central India.
A Voigt : Madras.

"The following table* shows the production from each district, state, and province during the past five years. From this it will be seen that the Central Provinces is by far the most important province as a producer of manganese. The figures in this table represent, except in a few cases, quantities of ore won or raised, and not of ore railed.

"Comparing this quinquennium with the previous five years it will be seen that the average annual production of manganese ore for the whole of India has increased substantially from 509,143 tons to 712,797 tons. But when comparisons are instituted for the separate districts and States it is seen that change has not all been positive. The four chief producing districts of the Central Provinces are responsible for the greater part of the increase, the Chhindwara district taking its proper place for the first time in 1913 owing to the extension of the Bengal Nagpur Railway into the Sausar tahsil. Bombay Presidency also shows a large percentage increase due to the opening up of deposits in the Panch Mahals. Gangpur State in Bihar and Orissa shows a six-fold increase in the average annual production, but the figures record a change from a maximum in 1909 to a minimum in 1913. The Madras Presidency shows a small increase, which is the balance of a very great increase in the production of Sandur State and a nearly as great average decrease in that of the Vizagapatam district. On the other hand Central India shows a great reduction in output, due to the working out of the easily won portions of the Kajlidongri deposit in Jhabua State; whilst the Mysore output has nearly halved due to a similar result in the great Kumsi deposit in Shimoga district."

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* See pages 434 and 435.

Production of Manganese Ore in India for the five years 1909 to 1913.

YEAR.	BIHAR AND ORISSA.	BOMBAY.			CENTRAL INDIA.	CENTRAL PROVINCES.					TOTAL.
	Gangpur	Panch-mahal	Ratna-giri	TOTAL	Jhabua.	Bala-ghat	Bhan-dara.	Chhind-wara.	Jubbul-pore.	Nagpur.	TOTAL.
	Tons.	Tons.	Tons	Tons	Tons.	Tons	Tons.	Tons	Tons	Tons	Tons.
1909	55,060	17,657	..	17,657	10,324	134,577	110,856	17,464	..	118,388	381,285
1910	41,958	30,396	525	30,921	12,664	161,987	159,164	19,556	300	211,232	552,239
1911	25,152	45,330		45,330	7,319	144,642	119,606	1,540	..	179,263	445,051
1912	27,173	43,538		43,538	5,652	135,435	115,365	16,517	..	147,225	414,542
1913	11,215	40,914		40,914	6,814	219,139	89,818	78,583		261,767	649,307
TOTAL	160,558	177,835	525	178,360	42,773	795,780	594,809	133,660	300	917,875	2,442,424
Provincial averages	32,112	..	..	35,672	8,555	..	..	..	..	..	488,485"

YEAR	MADRAS				MYSORE.				TOTALS FOR WHOLE OF INDIA	TOTALS FOR WHOLE OF INDIA.
	Bellary.	Sandur	Vizaga-patam	TOTAL	Chitaldrug	Shimoga	Kadur	TOTAL		
	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Statute Tons	Metric Tons.
1909		78,636	59,818	138,454	5,856	32,717	3,307	41,880	644,660	654,974
1910 . . .	500	73,666	46,441	120,607	1,803	40,715		42,518	800,907	813,721
1911		56,950	58,915	115,865		21,573		21,573	670,290	681,015
1912 . . .		62,488	54,758	117,246		24,929		24,929	633,080	643,209
1913 . . .		52,169	44,127	96,296		10,561		10,561	815,047	828,083
TOTAL .	500	323,909	264,059	588,468	7,659	130,495	3,307	141,461	3,563,984	3,621,007
Provincial averages .	..	.	..	117,694			.	28,292	712,797	724,201*

"The following were the exports of Indian Manganese ore from April 1st, 1909 to March 31st, 1914.

(*Statute Tons.*)

Year.	Vizagapatam.	Bombay.	Calcutta.	Mormugao.	YEARLY TOTAL.
1909-10	67,600	382,599	50,145	81,060	581,404
1910-11	43,200	449,488	80,291	101,053	674,032
1911-12	50,800	436,194	49,083	88,226	624,303
1912-13 . . .	54,000	581,690	72,391	78,800	786,881
1913-14	36,750	606,724	74,575	86,747	804,796

Exports of manganese ore.

"The figures of most importance are those relating to Central Provinces ore exported *viâ* Bombay. For not only did 71 per cent. of the Indian manganese ore exports for 1909-13 pass through this port, but 91 per cent. of this amount was derived from the Central Provinces, which provided 68 per cent. of the Indian production. These figures are also the most accurate. It will be seen from the table given below that the cost of exporting Central Provinces ore *viâ* Calcutta was considerably higher than for Bombay. This was due to heavier transport charges, owing partly to the longer railway lead to Calcutta than to Bombay, and partly to the unfavourable situation, with regard to the railways, of the Chhindwara deposits. But the close of the quinquennium has seen the opening of the Bengal Nagpur Railway to Sausar and Ramakona, so that the Chhindwara ore is now railed to Bombay.

Cost of manganese ore.

Average cost of Indian Manganese ore delivered c.i.f. at English and Continental Ports.

Area from which delivered.	Port from which exported.	Average cost per ton. Rs. A. P.
Central Provinces	Bombay . .	26 14 0
Ditto	Calcutta . .	31 10 0
Gangpur, Bihar and Orissa	Ditto .	22 5 0
habua, Central India	Bombay . .	22 3 0
Panch Mahals, Bombay	Ditto .	26 8 0
Vizagapatam, Madras	Vizagapatam .	23 7 0
Sandur, Madras	Mormugao .	23 7 0
Mysore	Ditto .	29 8 0

Railway rates on manganese ore.

In my book on "Indian Railways and Indian Trade," published in 1911, I wrote as follows in connection with Manganese ore rates by rail :—

"In demonstrating his case, the President of the Industrial Conference, held at Allahabad during December, 1910, laid stress on the point that during 1908 and 1909, the exports from India went down, but this was more or less due to the heavy fall in the prices and general depression in the trade, but things have altered towards better in the direction of increase in the exports. It may be useful to remark in this connection that although the Railway rate from Sihora Road to Calcutta is down to the absolute minimum of one-tenth pie per maund per mile, *viz.*, 0-5-11 per maund or Rs. 10-1-1 per ton still, during the period of depression, large stocks of manganese ore were lying near the mines.* Both the Calcutta and the Bombay lines quoted the minimum rates, they are at the present moment allowed to charge for this commodity. During 1906 about $\frac{2}{3}$rds of the manganese ore exports from India passed through the Bombay port. The Great Indian Peninsula Railway also charge the minimum rate of $\frac{1}{10}$th pie per maund per mile from Nagpur to Bombay, which works out to Re. 0-4-4 per maund for 522 miles or Rs. 7-6-0 per ton, whereas the railway freight on coal, for the same distance, is Rs. 6-6-0 per ton, so that the difference between the ore and coal rates is Re. 1-0-0 per ton, and the present railway rates on coal in India are undoubtedly about the cheapest charged by any railway in the world. It is correct that the value of export ore is comparatively higher than the value of export coal, and it is also to be admitted that there is no prospect in the immediate future of the traffic in ores assuming the same huge proportion as coal, but as the deposits of manganese ore are said to be enormous and the industry is in its infancy, which, if developed, will bring large sums of money to the country." At the coal rate railway freight on ore from Balaghat to Calcutta would be at Rs. 7-4-0 per ton, whereas the lowest rate the railway is now permitted to charge is Rs. 9-3-5 per ton.

The charges over the Bengal Nagpur Railway from the various mines to Nagpur are, however, on a higher mileage basis than the rate of the Great Indian Peninsula Railway from Nagpur to Bombay because of short hauls over the Bengal Nagpur Railway. The rates from the following mines to Itwari (Nagpur) are as under :—

Distance to Nagpur.	Stations.	Rate per ton.	Rate per maund per mile.
		Rs. A. P.	pie.
27	Kodegohan	1 7 0	·37
24	Saoner	1 4 0	·27

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* Due to ore being raised for shipment to America for the American Steel Trust by their own steamers, but the trust were not allowed to use their steamers.

It will be seen that the rates work out to ·37 pie per maund per mile, the maximum being ·33 pie per maund per mile. This is because the rates quoted above are inclusive of terminal charges. These rates are not unreasonable, having regard to the short lengths over the Bengal Nagpur Railway and also because for given weight of traffic the cost of haulage on 2′-6″ gauge line is much greater than on a broad gauge (5′-6″) line as will be seen from Appendix IV. A transhipment charge of Re. 0-4-6 per ton is made to meet the cost of transhipment from narrow gauge to broad gauge at Nagpur. But from Tumsar Road, which is on the broad gauge section of the Bengal Nagpur Railway, this railway levies the rate of ·20 pie per maund per mile to *viâ* Nagpur for a distance of 50 miles.

In the same way as the Great Indian Peninsula Railway levy a low rate of $\frac{1}{10}$th pie per maund per mile on manganese ore, the Bengal Nagpur Railway charge an equivalent low rate to the Calcutta port.

" Remarking upon the industrial uses of manganese Sir George Watt writes in his ' Dictionary of Economic Products of India ' as follows :—

" The uses to which the ores of manganese are put in the arts are somewhat varied. The peroxide is extensively employed in glass makings to destroy the green colour of glass which it does by converting the protoxide of iron into the peroxide. When added to excess, it gives the glass a red or violet colour. The same oxide is used in porcelain painting for the fine brown colour, which it yields. It is also employed in glazing pottery, and in the preparation of enamels. Its most valuable property, however, is the ease with which it gives off oxygen after the application of heat, a property which is largely taken advantage of in the arts. It is also used in the manufactures of chlorine and calcium chloride. Of late years the ores of manganese have been extensively utilised in the manufacture of iron and steel, by the Bessemer process, the latter especially. Manganese, in the metallic state, is said to deprive iron of its magnetism. A process of application of this principle has been invented in England, by means of which the metal, in the proportion of 27 per cent., is mixed with the steel used for ship buildings ; and it is contended that this mixture deprives the steel of its magnatic influence on the ship's compasses."

The above remarks were made years ago. More than 96 to 98 per cent. of manganese is now used for steel making. Only certain kinds of special steel are made without manganese, which is first made into ferro manganese and then used in the steel furnace. This is being done in India. The Barakar Iron Work's and Tatas Iron and Steel Works make ferro manganese and use it for steel making.

CHAPTER XVIII.

OTHER FOOD GRAINS AND PULSES.

Outturn and exports of Barley, Maize, Millets, Gram and pulse.

Next to Rice and Wheat other food grains of importance are :—

(Jow) Barley
Ragi
Maize
Jowar and Bajra (Millets)
Gram and

Pulses (moong, arhar, urid, masoor, matar or peas).

The year 1910-11 was a good year for all these crops, and the area under cultivation and the outturn of each province were as given below. The quantity exported, the ports *viâ* which each commodity found its outlet and the destinations have also been shown :—

PROVINCES.	BARLEY (1910-1911).							RAGI (1910-1911).	
	Area under cultivation.	Out-turn.	EXPORT TO		TOTAL EXPORT.	Exported *viâ*		Area under cultivation.	Out-turn.
			British Empire.	Foreign countries.					
	Acres.	Maunds.	Cwts.	Cwts.	Cwts.		Cwts.	Acres.	Maunds.
Bengal	95,000	1,016,000	221,659	45,255	266,914	Calcutta .	1,229	53,000	433,000
Chota Nagpur . . .	29,000	161,000				Bombay .	3,962	206,000	2,329,000
Behar	1,262,000	17,357,000				Karachi .	261,597	589,000	5,539,000
Bundelkhund . . .	99,000	1,185,000				Burma .	126	..	..
Agra Province East . .	1,495,000	21,575,000						58,000	459,000
Agra Provinces North and West including Oudh	3,404,000	48,865,000						99,000	930,000
Panjab	1,113,000	12,133,000						18,000	514,000
Sindh	28,000	257,000						1,000	12,000
Gujarat	17,000	169,000						96,000	1,975,000
Konkan	..	..						252,000	2,481,000
Deccan	9,000	125,000						317,000	4,487,000
Central Provinces . .	21,000	251,000						13,000	177,000
Madras	..	..						2,496,000	28,667,000
TOTAL .	7,572,000	103,094,000						4,198,000	48,003,000

PROVINCES.	MAIZE (1910-1911).		JOWAR AND BAJRA (1910-1911).						
	Area under cultivation.	Out-turn.	Area under cultivation.	Out-turn.	EXPORT TO THE		TOTAL EXPORT.	Exported *vid*	
					British Empire.	Foreign countries.			
	Acres.	Maunds.	Acres.	Maunds.	Cwts.	Cwts.	Cwts.		Cwts.
Bengal	53,000	721,000	10,000	94,000	355,105	163,949	519,054	Calcutta .	807
Chota Nagpur . . .	321,000	5,471,000	31,000	369,000				Bombay .	297,169
Behar	1,466,000	16,301,000	124,000	1,039,000				Karachi .	17,268
Bundelkhund . . .	15,000	147,000	892,000	5,407,000				Madras .	360
Agra Province East . .	432,000	5,250,000	222,000	1,457,000				Burma .	203,450
Agra Provinces North and West including Oudh	1,727,000	22,300,000	3,903,000	26,899,000					
Panjab	1,426,000	19,043,000	3,133,000	20,076,000					
Sindh	3,000	21,000	1,644,000	12,947,000					
Gujarat	117,000	1,522,000	956,000	10,454,000					
Konkan	..	..	2,000	22,000					
Deccan	39,000	507,000	10,516,000	84,422,000					
Berar	2,000	16,000	2,487,000	19,619,000					
Central Provinces . .	138,000	1,362,000	1,928,000	17,402,000					
Madras	114,000	1,045,000	9,131,000	78,652,000					
TOTAL .	5,853,000	73,706,000	34,979,000	278,859,000					

GRAM (1910-1911).

PROVINCES.	Area under cultivation.	Out-turn.	EXPORT TO THE		TOTAL EXPORT.	Exported *viâ*	
			British Empire.	Foreign countries.			
	Acres.	Maunds.	Cwts.	Cwts.	Cwts.		Cwts.
Bengal	208,000	1,592,000	449,872	459,140	909,012	Calcutta	357,022
Chota Nagpur	63,000	469,000				Bombay	47,848
Behar	845,000	7,836,000				Karachi	480,571
Bundelkhund	895,000	8,150,000				Madras	6,425
Agra Province East	793,000	7,069,000				Burma	17,146
Agra Provinces North and West including Oudh	4,155,000	40,445,000					
Panjab	4,051,000	36,084,000					
Sind	144,000	569,000					
Gujarat	87,000	182,000					
Konkan	4,000	16,000					
Deccan	506,000	4,428,000					
Berar	148,000	971,000					
Central Provinces	1,178,000	8,794,000					
Madras	162,000	1,511,000					
TOTAL	13,239,000	118,436,000					

OTHER FOOD GRAINS (PULSES) (1910-1911).

PROVINCES.	Area under cultivation	Out-turn.	EXPORT TO THE		TOTAL EXPORT.	Exported *viâ*	
			British Empire.	Foreign countries.			
	Acres.	Mds	Cwts.	Cwts.	Cwts.		Cwts.
Assam	132,000	5,601,000	1,989,896	495,758	2,485,654	Calcutta	1,543,251
Bengal	1,706,000	71,520,000				Bombay	307,480
Chota Nagpur	642,000	22,666,000				Karachi	73,124
Behar	3,180,000	110,185,000				Madras	16,490
Bundelkhund	465,000	5,202,000				Burma	545,309
Agra Provinces East	2,342,000	26,005,000					
Agra Provinces North and West including Oudh	4,326,000	46,810,000					
Panjab	1,709,000	19,412,000					
Sind	292,000	2,773,000					
Gujarat	550,000	6,604,000					
Konkan	311,000	3,832,000					
Deccan	2,486,000	26,416,000					
Berar	659,000	2,628,000					
Central Provinces	4,600,000	19,272,000					
Madras	7,502,000	67,299,000					
TOTAL	30,902,000	436,225,000					

It will be seen that barley, jowar and bajra, gram and pulses are exported in small quantities, so the quantity consumed in India must be large.

In Northern India, the ryots grow wheat and oilseeds mostly for sale while the cheaper food grains, like jowar, bajra, maize, etc., are chiefly intended for local consumption, the grain is used as the food of the human beings and the husks (bhoosa) and stalks are utilised as cattle fodder.

The percentage of exports of food grains, other than wheat and rice, to the outturn during the years 1907-08 to 1911-12 was as follows :—

1907-08	·79 per cent.
1908-09	·23 ,,
1909-10	·58 ,,
1910-11	·52 ,,
1911-12	3·0 ,,

It will thus be seen that so far as the railway traffic in these food grains is concerned it is chiefly for local consumption in the country.

Statements are appended showing the traffic in jowar and bajra and gram and pulses of the various railways.

	JOWAR AND BAJRA.				GRAM AND PULSES.			
	1912.		1913.		1912.		1913.	
	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Eastern Bengal Railway	..	..	..	..	82,127	3,03,255	104,771	3,57,748
Assam Bengal Railway	..	..	.	..	12,037	76,649	14,079	83,885
East Indian Railway	58,461	1,39,214	37,077	1,62,002	486,514	32,75,221	291,726	18,97,905
Bengal-Nagpur Railway	2,728	11,682	4,243	17,637	108,490	8,01,351	112,415	7,85,465
Madras and Southern Mahratta Railway	124,268	8,51,465	65,718	3,87,719	235,283	15,19,459	232,993	15,21,525
South Indian Railway	28,508	1,35,748	13,713	59,483	134,239	6,34,577	139,293	6,31,688
Nizam's Guaranteed State Railway	42,542	1,96,381	36,523	2,18,395	25,784	1,26,623	21,759	1,13,391
Great Indian Peninsula Railway	300,452	2,762,525	175,388	15,90,824	118,801	4,605,154	328,400	32,76,487
Bombay, Baroda and Central India Railway.	151,882	1,341,618	68,233	5,63,539	124,470	9,42,583	84,508	6,32,606
Oudh and Rohilkhund Railway	36,005	1,63,804	13,906	64,251	124,121	519,718	1,70,657	7,98,787
Bengal and North-Western Railway	4,364	17,134	2,125	10,784	169,213	830,866	1,21,900	5,44,360
Rohilkhund and Kumaon Railway	30,779	82,041	7,713	17,813	46,479	137,123	26,800	74,064
North Western Railway	68,668	4,20,334	119,649	7,26,844	562,543	4,796,791	4,66,204	20,80,924

Wheat rates apply to other grains and pulse.

The railway rates for wheat apply to all food grains, and in the chapter on wheat both the local and the export rates have been dealt with. The export rates are not of much importance to food grains other than wheat, but the scale rates apply to the commodities referred to in this chapter.* These scale rates for the various important railways in India for different distances have been worked in the chapter on wheat, and remarks made therein apply in this case also.

It may however be remarked that there has not been a marked increase in the outturn of food grains, other than wheat and rice, as the following comparisons for 20 years will prove :—

OUTTURN OF FOOD GRAINS OTHER THAN RICE AND WHEAT.

(In lakhs of maunds.)

1891-92	84,70
1892-93	93,89
1893-94	95,31
1894-95	93,30
1895-96	95,63
1896-97	63,65
1897-98	104,45
1898-99	111,27
1904-05	89,95
1905-06	85,19
1906-07	97,38
1907-08	83,61
1908-09	88,08
1909-10	103,16
1910-11	105,85
1911-12	98,44

The area under cotton cultivation has increased in higher proportion to the area under cheaper food grains, and this is one of the main reasons for the outturn in cheap food stuffs not having increased, but the ryots have been benefited, for their wealth has increased by the growing of high priced commodity like cotton and they imported cheap Burma rice for food consumption, wherever there was a shortage of food stuffs.

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* *Vide* page 317 for the scale rates of important railways for grain.

CHAPTER XIX.

GHEE, CATTLE FOOD AND CATTLE.

First to deal with Ghee. The classification of ghee in the railway tariffs is as follows :— *Ghee rates.*

	Class
At Railway Risk	3rd
At Owner's Risk	2nd

but in the exception list of the East Indian and other railways, ghee, when booked at owner's risk and carried for distances over 150 miles, is classified 1st class. This classification has been in force for a number of years. In 1909-10, however, there was a proposal to abolish the 1st class rate for ghee at owner's risk carried over 150 miles.

About this time, my book entitled "Indian Railways and Indian Trade" was published (in February 1911), and in connection with the proposed rise in the classification of ghee I wrote as follows :—

"It may not be out of place to mention here that ghee is an important item of food to every Indian, and in the case of a commodity, which is so universally consumed by the people, it is naturally expected that the railway rates would be reduced instead of increased, but the classification of ghee carried for distances of over 150 miles has been raised from 1st class (⅓rd pie per maund per mile) to 2nd class (½ pie per maund per mile). For ghee carried for 300 miles, the increase in the rate per ton is Rs. 7-1-0. Even the poorest Indian will take ghee, if he can afford it, and will not the rise in the railway rate affect him? Even a middle class Indian family would be affected on ghee brought from a distance of 600 miles; the increase in the price per maund will be 100 pies or Re. 0-8-4 per maund or 2½ pies a seer, and taking half a seer as the daily consumption in a middle class family, the extra money paid in a month will be 3½ annas, which should provide for one day's vegetable bazar for such a family, and to a poor this amount means one day's wages."

Ghee is not so much an article of luxury to an Indian as is generally supposed to be. To him it is an article of necessity; but the continual rise in the price of ghee is placing it beyond the reach of the poorer classes. It was argued by some at the time my book was issued (7 years ago) that in the case of a commodity, the price of which was so high as Rs. 50 per maund, the rise of 100 pies or Rs. 0-8-4 per maund in railway freight was an insignificant figure and would not affect the price paid by the consumer. This is no doubt a forcible argument. But there is another side of the case too; ghee cannot generally be had by the consumer direct from the producer, and when it is transported from a distant place the middleman plays a very important part and it is on his margin of profit that a great deal depends as to the movement of ghee traffic.

Now let us see what margin of profit there is to the middleman, who buys at distant places and sells in large towns.

Price of ghee.

(The price of ghee has risen considerably during the past 10 years. The rise from 1907-1912 was as follows as compared with the prices of 1890 and 1900.)

Wholesale prices per maund in Presidency towns or at principal ports.

—	Calcutta.			Bombay.			Madras.			Karachi.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1890	30	8	0	32	8	9	33	8	3	26	0	10
1900	37	4	0	34	4	11	33	0	10	33	0	0
1907	46	0	0	44	6	0	45	12	11	35	3	0
1908	42	8	0	42	4	8	42	14	11	36	3	0
1909	41	4	0	41	9	7	44	1	0	34	5	0
1910	44	8	0	43	11	5	48	14	6	35	8	0
1911	45	8	0	45	6	4	48	15	9	44	4	0
1912	49	8	0	48	10	6	49	5	11	50	8	0

The rise has been universal throughout India and compared with 1890 (nay even 1900) the rise has been enormous.

The enhancement in the prices was due to a limited supply of ghee, and it was the rise in the prices at the producing centres that tended to increase the prices in large towns.

Calcutta, for instance, gets large quantities of ghee from the United Provinces of Agra and Oudh. While in 1911 and 1912 the average annual prices in Calcutta were Rs. 45-8-0 and Rs. 49-8-0 respectively the prices in the United (Agra) Provinces (East) were Rs. 44-10-6 and Rs. 47-2-10. If the railway rate was 2nd class for ghee carried over 150 miles, the freight for 500 miles would be Rs. 1-4-10 per maund.

At the 1911 and 1912 prices of ghee in Calcutta and in United Provinces Districts the differences were as follows :—

1911—

	Rs.	A.	P.
Price in Calcutta	45	8	0
Price in United Provinces	44	10	6
DIFFERENCE .	0	13	6

1912—

	Rs.	A.	P.
Price in Calcutta	49	8	0
Price in United Provinces	47	2	0
Difference	2	5	2

Taking the prices prevailing in 1911 there would be no margin of profit at all, whereas on the figures of 1912 the profit would be Rs. 1-0-4, thus—

	Rs.	A.	P.
Difference in price of ghee between the producing centre and in Calcutta	2	5	2
Railway freight	1	4	10
Margin of profit	1	0	4

But there are other expenses besides the railway freight, and above all thefts of ghee in railway transit are not un-common. Even the 2nd class rate is an owner's risk rate, (the railway risk rate being third class or 50 per cent. higher), and the Railway would not be responsible if almost the whole of the contents of a tin of ghee were abstracted, and an almost empty tin was delivered at destination. Merchants have therefore to take some risk in ghee business but they have to avail themselves of the lowest rate (which is an owner's risk rate) as the margin of profit is small.

In Bombay itself, the average annual prices in 1911 and 1912 were :—

	Per maund.		
	Rs.	A.	P.
1911	45	6	4
1912	48	10	6

but the prices in the interior of the Bombay Presidency, such as Deccan and Gujarat (or even in Konkan), were higher as shown below :—

	In Gujarat.	Konkan	Deccan.
	Rs. A P	Rs. A. P.	Rs. A. P.
1911	52 0 0	46 12 8	45 11 4
1912	52 0 0	49 4 7	49 3 8

So that any business in ghee from these districts with Bombay town could not have been a business of profit.

The prices quoted above are all taken from Mr. Datta's report on the Rise of Prices in India.

It will be seen from the examples given herein that any enhancement in the classification of ghee is not at all an easy thing, which can be effected without considering all sides of the question.

Another question is whether the railway traffic has expanded even under the present rates. The total railway traffic in ghee since 1907 has been as follows :—

	Tons.
1907	84,611
1908	90,180
1909	95,521
1910	94,198
1911	92,686
1912	87,551
1913-14	88,176
1914-15	92,152
1915-16	94,660

Development of Ghee traffic.

These figures do not, however, represent the actual total weight, for in the case of through traffic the same weight has been included in the figures of more than one railway. Therefore the total actual weight carried must have been less.

It may be remarked that the development of traffic in ghee on Indian Railways has not been unsatisfactory on the whole, but when we go further than 1907 and see that with the Railway mileage of 24,707 in 1900 the traffic was 110,084 tons, it cannot certainly be said that in 1915-16 with 35,883 miles of Railway lines open the traffic of 94,660 tons was an encouraging figure ; the figures of 1900 were never reached during the years 1907 to 1915-16.

Decrease in supply of cows and plough bullocks.

Before the Prices Enquiry Committee witnesses repeatedly put forward the argument that the supply of both milch-cows and plough bullocks was decreasing in consequence of the following reasons :—

(*a*) Closing of grazing grounds and pathways for cattle in villages ;
(*b*) Restrictions placed in grazing cattle in forests ;
(*c*) Epidemic diseases ;
(*d*) Slaughter of cattle for food and for hides.

Further, the loss of nutritious cattle food to India, which would be available if greater part of the oil seeds were crushed in this country, is another factor, which has to be taken into account for oil cake makes very good cattle fodder. Then there is a regular export of cattle from the Southern India to Ceylon, and it is also said that not very long ago, some of the farmers of South America took away a large number of very superior cattle for their ranches from India. Whether such exports are good for the country and should be allowed is very doubtful.

* These are matters, which properly come within the scope of an enquiry by a commission or by experts on the improvement of breed of cattle in India ; but whether cattle food (such as grass, hay, straw, cotton seed, oil cake) should ordinarily be carried at the rates which

apply during famines or at a slightly higher rate is an important factor and requires consideration by the Government and the railways.

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* Some, however, say that exports of cattle may encourage ryots to improve the breed of cattle generally.

Railway rate for fodder.

Oil cake is sometimes charged at rates higher than those for grain or at equal rates.* From the point of view of economic working or on the principle that low rates can only be quoted for a heavy or good paying load traffic, lower rates than are now charged may not be permissible for cattle fodder; but seeing that India is so largely an agricultural country and as cattle is such an important factor in agriculture, the question of cheapening the cost of cattle food and making the same easily available in different parts of India, at least where there are railways, should attract the attention of responsible Government authorities.

A rate of Re. 0-2-3 per wagon mile for cattle fodder including oil cake will not mean carrying traffic at a loss. During the financial year 1915-16, the average cost of hauling a goods vehicle with its load one mile was less than 24 pies on all the broad gauge lines, excepting the Nizam's Guaranteed State Railway. In fact, during the second half of the year on most of the lines, the cost did not exceed 19 pies, and therefore it will not mean carrying traffic at a loss if the rate of Re. 0-2-3 per wagon mile is charged on broad gauge lines and Re. 0-1-6 per wagon mile for metre gauge lines for loads of 300 maunds and 240 maunds respectively. The rate will work out to ·08 pie per maund per mile. The difference between the present minimum ($\frac{1}{10}$th pie) and ·08 pie rate, which will of course require special sanction of the Government, will be $\frac{1}{50}$th pie per maund per mile.

Railway rates for cattle.

The traffic in *cattle* over all the Indian Railways, taken together, was as follows :—

Year.	No. of cattle.	Earnings in
		Rs.
1909	426,832	10,19,309
1910	423,488	11,95,683
1911	529,364	15,80,538
1912	532,796	14,76,440
1913-14	694,932	20,02,977

The movements were principally in milch cows and buffaloes for sale in large towns; the carriage of cattle by rail for agricultural purposes and for grazing to and from big pasture grounds was small, if any. In America, there is a large railway traffic on last account.

The railway rates in India are low enough. For 10 cows or buffaloes or 8 cows or buffaloes, with their calves, carried in a broad gauge wagon, the rate is, for distances up to 150 miles, three annas per wagon per mile and 2½ annas for any distances beyond. So that up to 150 miles, for 10 animals carried in a truck the charge is 3·6 pies per mile per head. The cattle rates are however not provided for in the schedule of maxima and minima rates for goods train traffic sanctioned by the Government of India for each railway.

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* It has been pointed out to me that there should be no discrimination between the rates for oil cake for manure and oil cake for cattle food for the cake is the same.

CHAPTER XX.

HIDES AND SKINS.

Export value of hides and skins and effect of exports on Indian leather trade.

The following were the figures of the export value of hides and skins and leather from India to other parts of British Empire and to foreign countries from 1908-09 :—

Hides and Skins (Raw).

1908-09.	1909-10.	1910-11.	1911-12.	1912-13.
£	£	£	£	£
5,559,103	6,434,147	5,996,131	6,295,718	7,845,484
Hides and Skins tanned, or dried, and leather.				
2,761,169	2,655,236	2,742,214	3,006,123	3,082,498

It will be seen from these figures that there was a steady increase in the rise of the value of exports of hides and prepared leathers from this country, but the figures for raw hides are far greater than those for tanned hides or leather.

In 1908, Mr. A. C. Chatterjee, I.C.S., made the following remarks in his Notes on the Industries of the United Provinces :—

" The local industry in leather has, on the whole, suffered considerably by large demand in Europe and America for Indian hides and skins, and by the competition of foreign-made goods."

The encouragement of exports in raw hides and skins helped to make the competition of foreign-made leather goods in India formidable, and the Indian industry in leather was consequently hampered. India supplied raw materials to foreign countries which compete with Indian made goods, and the railways practically encouraged the export of raw material out of India by lowest possible rates. Mr. Chatterjee, I.C.S., went on further to say :—

" Another disquieting feature of the traffic is that there is a notable decrease in the export of dressed hides and skins."

The enormous rise in the exports of raw hides confirm the remark (which in the words of Mr. Chatterjee show), " that local industry has no longer any share even in the preliminary process of dressing the goods exported."

The chief difficulty that the tanneries in Cawnpore had to contend with was the restricted supply of hides, due entirely to the abnormal rise in exports, which restricted the supply and raised the prices, thus handicapping the local industries. It is also to be pointed out that it was about the same time that the above remarks appeared in Mr. Chatterjee's notes on Indian Industries, which was published by the Government and made available for sale to the public, that the Indian Railways came down to the lowest figures in their railway rates for hides for export.

The North Western Railway, the Great Indian Peninsula Railway and the East Indian Railway quoted rates to Karachi, Bombay and Calcutta respectively at Re. 0-3-0 per wagon per mile for loads of 360 maunds per wagon, which equals to $\frac{1}{10}$th pie per maund per mile, *i.e.*, the minimum rate permitted by the Government.

In support of this remark the following extract from the goods tariff of the East Indian Railway for June and July 1909 is given :—

Rates for export hides.

Hides and skins dry, at owner's risk subject to a maximum loads of 360 maunds per wagon. Any weight in excess will be charged at the proportionate rate.

	Per wagon mile. Rs. A. P.
From Amballa Cantonment and *viá* to Howrah	0 3 0
„ Delhi and *viá* to Howrah	0 3 0
„ Agra to Howrah	0 3 0
„ Cawnpore and *viá* to Howrah	0 3 0

As already pointed out 360 maunds at Re. 0-3-0 per wagon mile gives a rate of $\frac{1}{10}$th pie per maund per mile.

Then again wet hides from Delhi were also given a similarly low rate which the following quotation from the same tariff will indicate :—

Hides and Skins wet at owner's risk in full wagon loads irrespective of the marked carrying capacity of the vehicles.

	Rs. A. P.
From Amballa Cantonment and *viá* to Howrah	199 14 0

Hides and Skins wet or dry at owner's risk in full wagon loads, irrespective of the marked capacity of vehicles used.

	Rs. A. P.
From *viá* Delhi to Howrah	166 5 0
„ *viá* Ghaziabad (except Oudh and Rohilkhund Railway) to Howrah and *viá*	168 15 0

Hides and Skins wet at owner's risk in full wagon load. Load not to exceed 336 maunds per wagon.

From *viá* Ghaziabad except Oudh and Rohilkhund Railway to Howrah	**170 1 0**

Taking the Delhi rate at Rs. 170 per wagon and the load at 336 maunds, the rate comes to nearly Re. 0-8-1 per maund, which was equal to the rate of ·107 pie per maund per mile.

Low rates for hides for export yet obtain from places like Cawnpore, Agra, Delhi to Calcutta as shown on pages 476 and 477 of the East Indian Railway goods tariff Pamphlet No. 1 of 1917 :—

Hides and Skins in wagon loads of 436 maunds.

	Rs.	A.	P.
From Cawnpore to Howrah	176	4	0
„ Agra to Howrah	217	0	0
„ Delhi to Howrah	229	0	0

These rates for hides work out to—

Distance from Calcutta Miles.		Per maund. Rs.	A.	P.
633	From Cawnpore	0	6	6
790	„ Agra	0	8	0
903	„ Delhi	0	8	5

or between $\frac{1}{9}$th and $\frac{1}{10}$th pie per maund per mile ; similar rates are also quoted by the Bombay lines to Bombay and by the North Western Railway to Karachi.

It is true that the local tanneries in Calcutta and in Bombay had the advantage of these low export rates, but following the example of the Great Indian Peninsula Railway, in the matter of cotton rates to Ahmedabad, Surat, etc., it was possible for the railways to have made the lowest rates applicable to the local tanneries in Calcutta and in Bombay and to have applied rates of 5 annas to 6 annas per wagon mile to the export traffic.

While the Great Indian Peninsula Railway charge lower rates for cotton to Nagpur their rates *viâ* Nagpur to Calcutta are higher ; and in the same way, the Tapti Valley Railway rates to Ahmedabad, Surat, etc., are lower than their rates *viâ* Surat on Bombay traffic.

The most important point is that the low rates for export hide traffic were brought about purely owing to competition between Railways. By an arrangement between themselves they could have levelled up the rates, as they did in the case of all other traffic, unless it was their intention to let the export hides have the advantage of the lowest rates. It is well known that during the period that the rates came down in 1909-10 (principally to encourage export of hides to America) there was considerable demand, for hides and skins from India, in Germany, America, England, and in a few other European countries, and it was also shown at the time that the exports from India were handicapping the local leather industry of the country. If, therefore, the foreign countries wanted hides and skins from India they should have paid higher rates.*

The competition was started by the Hansa Line Steamer Company and the East Indian Railway who combined together to divert the traffic from the Northern India to America *viâ* the Calcutta port, which traffic was taking the western ports for its outlet from India. The reduction in the rates of the East Indian Railway was followed by reductions on the part of the Great Indian Peninsula Railway and the North Western Railway to Bombay and Karachi respectively. It was never shown that the buyers in the markets of consumption could not pay a price which included cost of transportation in India at a rate higher than 3 annas per wagon per mile. During the period of competition it was to the interest of the Bombay lines to maintain as low mileage rate as possible to the ports so that the difference in railway freight from an important centre like Cawnpore would not be great in favour of Calcutta, as the following illustrations will shew :—

	pies
(1) Difference in favour of Calcutta at $\frac{1}{10}$th pie rates—	
Cawnpore to Calcutta, 633 miles, at $\frac{1}{10}$th pie per maund per mile	63
Cawnpore to Bombay, 840 miles, at $\frac{1}{10}$th pie per maund per mile	84
Difference in favour of Calcutta	21
(2) Difference in favour of Calcutta at $\frac{1}{5}$th pie rates—	
Cawnpore to Calcutta, 633 miles, at $\frac{1}{5}$th pie per maund per mile	126
Cawnpore to Bombay, 840 miles, at $\frac{1}{5}$th pie per maund per mile .	168
Difference in favour of Calcutta	42

It was, therefore, not to the interests of the Bombay lines to let the rates remain at a higher mileage rate ; but seeing that for all the commodities an arrangement was come to to level up the rates by accepting the principle that the difference in favour of Calcutta would be the " bed-rock difference " (*i.e*, the difference that would exist if both railways went to their minimum), it cannot be understood why the rates to the ports for export hide traffic could not have been enhanced and the " bed-rock difference " maintained.

The enhancements in rates, unless they were perhaps to the maximum, probably would not have improved matters very much so far as the Indian industries were concerned, because the foreign manufactures could have afforded to pay a higher price, but the higher freight per mile on Indian Railways would have saved unnecessary loss of revenue to them, which would have been at least some compensation to India for the loss of its hides and skins to the detriment of the interests of its industries. The railways cannot say that it was ever proved to them that the foreign manufactures could not buy at a higher rate. In their desire to divert traffic from one port

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* It is said that Indian hides (raw materials) occupy a very important place in the world's supply, and the prices have been on the rise, this disproving the necessity for low rates to encourage exports.

[illegible] the railways could not come to an arrangement under which the mileage rate could be made higher than the minimum, as was done for many other commodities.

The East Indian Railway rates to Cawnpore for the local tanneries and leather manufactures are decidedly on a higher basis. These are as follows:—

Miles.	From	To	Rate per maund.	Per maund per mile.	For wagon loads of 100 maunds at Owner's risk.
			A. P.		
394	Amballa Cantonment .	Cawnpore	6 9	·208	
159	Bhungaon . . .	,,	5 8	·127	
271	Delhi	,,	6 4	·280	
348	Jubbulpore . . .	,,	9 8	·303	
291	Katni	,,	6 0	·247	

Railway traffic in hides.

The following were the figures of traffic in hides and skins of the following railways for the period 1911—1913-14.

Hides and Skins.

—	1911.		1912		1913-14.	
	Weight	Earnings	Weight	Earnings	Weight	Earnings.
	Tons	Rs.	Tons	Rs.	Tons.	Rs.
Bengal Nagpur Railway	13,895	1,16,400	15,246	1,42,579	14,673	1,42,595
Bombay, Baroda and Central India Railway	5,881	65,835	9,063	86,569	5,625	57,659
Eastern Bengal State Railway.	26,760	1,73,775	19,003	1,36,203	17,567	1,19,736
East Indian Railway .	40,624	5,48,905	45,845	6,69,279	39,829	6 20,675
Great Indian Peninsula Railway.	20,750	3,35,620	28,381	4,67,087	23,367	3,53,549
Madras and Southern Mahratta Railway.	41,302	4,31,317	46,827	4,01,096	37,223	3,29,296
North-Western Railway.	30,012	3,25,814	42,249	4,61,250	38,976	4,65,540
Oudh and Rohilkhund Railway.	12,309	63,976	12,913	67,058	14,129	87,520
Bengal and Northern-Western Railway.	13,355	97,409	10,781	71,192	11,447	79,802
South Indian Railway .	14,915	1,28,285	17,055	1,40,878	16,482	1,34,439

CHAPTER XXI.

TEA.

The following extract from the "Investor's India Year Book, 1916, Fourth Edition" will serve as an introduction to this chapter on Tea :—

Tea industry, early and present.

"It was not until 1831 that tea received serious attention in India. The first tea company was started in 1840, namely, the Assam Company, but it was not until some two decades later that the capital of the investing public was attracted to any large extent in the industry. From that time onward, the growth and progress of the industry has been rapid and continuous. There have been periods of depression brought about by over production, but, on the whole, it may be confidently asserted that the tea industry has afforded, and exhibits every prospect of continuing to afford, as good a field for the investment of capital as any other industry in India. The main tea-producing districts are Assam, Cachar, Sylhet, the Bengal Duars, the Terai, Darjeeling, and in Southern India, Travancore, and the Nilgiris. The acreage under tea has increased from 283,925 in 1885 to 619,630 in 1914, and owing to improved methods of cultivation the average outturn per acre has also doubled itself in this period. On the other hand, the world's consumption of tea has kept pace with the increased production, and the latest available statistics show stocks to be rather below the normal.

"In order to arrive at a correct view of the position, the product investor must consider other sources of supply, outside India itself. The only tea-producing countries, outside India, which have to be reckoned with at the present time are China, Ceylon, Java and Japan, including Formosa. The use of tea as a beverage in China dates back from time immemorial, and until comparatively recent times China practically monopolized the tea trade of the world. In 1879 only 34 million pounds of Indian tea were consumed in the United Kingdom, as compared with 126 million pounds of China tea. About this period, owing to the disastrous effects of the coffee leaf disease, Ceylon planters turned their attention to tea, and the production from this island has been a most important factor in the tea trade ever since. In 1890 the relative consumption in the United Kingdom from these three main producing countries was as follows :—China, 57,530,337 lbs., India, 101,961,686 lbs., Ceylon, 34,516,469 lbs. whilst in 1915 they were China, 12,779,972 ; India, 182,010,261 ; Ceylon, 92,729,080. It will be seen at a glance how rapidly the stronger teas from India and Ceylon have ousted China tea from the English market. In Java considerable attention has been given, during recent years, to the cultivation of tea, and during the past six years the quantity of tea exported has risen from 32 million pounds to 101 million pounds, and although a large area has been given up to the cultivation of rubber in the island, there is undoubtedly every reason to anticipate that the exports of tea will increase considerably more in the near future, and is a factor which must be reckoned with.

"The exports from China are principally to Russia and the United States, and those from Japan are principally to the latter country, but during recent years there has been a very large increase in the Russian demand for British grown teas and it is not saying too much to ascribe the present prosperity of the Indian industry chiefly to this cause. Russia has now become the largest consumer of Indian tea, outside the United Kingdom, and in 1915 took no less than 48 million pounds by direct imports from Calcutta. There is ample land of a suitable character available in India for extensions, as, in Assam and Bengal, not more than 30 per cent. of the total land acquired by tea companies and private owners has been put under tea. Labour, however, is a difficulty, as the bulk of it has to be imported at great expense, and this factor alone is sufficient to prevent too rapid expansion in the acreage under tea.

"India, itself, has proved a disappointing market for tea up to the present time, but, although it is impossible to procure any reliable figures of internal consumption, there is no doubt that the demand is steadily increasing year by year. It is estimated that some 23 million pounds of tea were locally used during 1915.

Mr. L. S. S. O'Malley in his Geography of Bengal, Bihar and Orissa and Sikkim, published in 1907, remarks in connection with the tea industry as follows :—

"The manufacture of tea is the principal manufacturing industry connected with agriculture. The experimental growth of the Chinese variety of the plant was introduced into Darjeeling by Dr. Campbell, the Superintendent of the district, in 1840, and the industry became established there as a commercial enterprise about 1856. Plantations quickly multiplied and spread from the hills to the Tarai of Darjeeling and the Duars of Jalpaiguri ; the first garden in the latter was opened out in 1874. There are now 372 gardens in Bengal, the output of which in 1911 was 65,000,000 lbs., almost all black tea. The Darjeeling tea has a high reputation for its fine flavour ; generally speaking, the higher the elevation of the gardens, the better the quality of the leaf. The bud makes Orange Pekoe and Broken Orange Pekoe, the young leaf next to it Souchong, and the coarser leaf Pekoe Souchong. The objectionable method of rolling the leaf by hand, which is practised by the Chinese, has long been given up, and machinery is employed for the different processes of rolling, drying, sifting, etc."

Area under tea cultivation.

The following are the figures of area under tea cultivation and the outturn (lbs.) in the various provinces of India during 1910-11 :—

—	Area under cultivation.	Outturn.
	Acres.	lbs.
Assam	350,000	175,095,000
Bengal	92,000	63,153,000
Agra Provinces North and West including Oudh . .	5,000	2,045,000
Panjab East.	10,000	1,419,000
Madras West	16,000	5,645,000
TOTAL .	473,000	247,357,000

Tea traffic of principal tea despatching lines.

It will be observed that by far the largest quantity of tea was produced in the Provinces of Assam and Bengal. The Indian Railways carrying heavy traffic in tea were the Assam Bengal and the Eastern Bengal State Railways. The Eastern Bengal State Railway is fed by the Darjeeling Himalayan and the Bengal Dooars Railways and the Assam Bengal by the Dibru Sadiya Railway.

The rates of the Assam Bengal Railway have been dealt with in Appendix I and need not therefore be repeated here. The traffic on the Indian Railways carrying "Indian tea" in large quantities is given below :—

—	1912.		1913-14		1914-15.	
	Tons.	Rs.	Tons.	Rs	Tons.	Rs.
Eastern Bengal Railway	36,553	6,81,779	42 667	7,65,676	40,881	7,53,920
Bengal Dooars Railway.	19,683	4,06,629	22,030	5,10,697	22,003	4,55,419
Assam 'Bengal Railway	42,336	5,31,275	41,723	5,10,607	41,973	4,89,584

The general classification of tea on Indian Railways is 2nd class, but the Eastern Bengal State Railway, which carries the heaviest traffic in tea, has been allowed to fix its classification at 5th Class (1 pie per maund per mile), but over the Northern and Bengal sections of the Eastern Bengal Railway the classification is 4th class ($\frac{5}{8}$th pie per maund per mile). But generally lower rates than the class rates are in force for traffic to Calcutta.

The following are special rates from the undernoted important tea despatching centres to Calcutta:—

From	Miles.	Rate per maund.			Rate per maund per mile.
		Rs.	A.	P.	
Siliguri and *viâ*	335	1	0	0	·573
Viâ Jalpaiguri (for Dooars tea) . . .	312	1	1	0	·654
Viâ Lalmanirhat „ „	293	0	13	1	·384
Viâ Amingaon (for Assam tea) . . .	468	0	15	0	·536
Viâ Dhubri Ghat „	338	0	5	6	·195

It will be observed that while a rate of ·195 per maund per mile is charged on tea *viâ* Dhubri Ghat from the Brahmaputra Valley, which can be carried direct by steamers to Calcutta, the rate *viâ* Lalmanirhat works out to ·384 pie per maund per mile, the distance from Dhubri being 338 and that from Lalmanirhat 293 miles. Here the charge for a shorter distance is more than double than that for a longer distance. The *viâ* Siliguri and *viâ* Jalpaiguri rates are higher still, the latter being almost equal to 3rd class.

The rates have been taken from the Eastern Bengal State Railway tariff No. 5 of 1916 (which according to the advice received from their Traffic Manager in November 1917 is the latest tariff). It will be observed that the Eastern Bengal Railway have not been able to take advantage of their maximum class rate, *viz.*, 4th class, allowed under the classification either from Siliguri or from Lalmanirhat to Calcutta although there is no other means of transport available either at Siliguri or at Jalpaiguri. It is however possible for traffic to be booked from these two places to Dhubri and then made over to the steamers there, and if the Eastern Bengal Railway were to charge higher rates and there was no hurry in getting the goods quick through for immediate sale in the Calcutta market, it would be cheaper to book to Dhubri from Siliguri and Lalmanirhat and then to bring tea from these places downwards by steamers to Calcutta.

The tea rates between Goalundo and Calcutta have been discussed along with other rates between these points in Chapter II* in connection with the competition between the Eastern Bengal Railway and the River Steamer Companies for traffic between Calcutta and the Eastern Bengal and Assam.

It will be observed that the Bengal Dooars Railway, with a comparatively small amount of traffic in tea, has apparently a bigger earning than the Assam Bengal Railway although the lead of the Bengal Dooars Railway must necessarily be smaller as the total length of the line including branches is not more than 121 miles. This is due to the existence of very high rates for tea on that railway; while the maximum and minimum rates on the Southern section are the same as on the other State lines, the Bengal Dooars have higher maximum sanctioned for their original line and the Eastern and Western extensions, where the maximum allowed for tea is 3 pies per maund per mile and the charge on these sections is actually made at 2·5 pies per maund per mile, which accounts for the higher earnings.

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* *Vide* page 147.

CHAPTER XXII.

LAC.

Railway traffic in lac.

The lac industry of India is most important in the United Provinces and in Calcutta. Of the factories (both European and Indian) up country the largest number are centred at Mirzapur.

The following are the figures of traffic in lac (stick lac and shellac) over the important railways in India :—

—	1911.		1912.		1913-14.	
	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Bengal Nagpur Railway	13,838	1,52,230	19,876	2,17,372	15,026	1,65,678
Bombay, Baroda and Central India Railway.	73	713	135	1,177	388	3,818
Eastern Bengal State Railway.	1,256	9,858	1,491	11,014	1,173	6,697
East Indian Railway .	20,640	3,00,511	24,649	3,51,553	23,007	3,22,592
Great Indian Peninsula Railway.	1,078	9,634	1,630	15,621	1,468	14,415
Madras and Southern Mahratta Railway.	120	1,128	96	1,097	96	1,245
North Western Railway	631	6,073	662	5,551	896	7,691
Oudh and Rohilkhund Railway.	347	1,901	460	2,532	777	5,009
Bengal and North-Western Railway.	1,445	3,810	1,344	8,069	1,320	8,335
South Indian Railway .	322	2,159	303	1,648	328	2,118

It will be observed that the East Indian Railway carried the largest traffic and that the Bengal Nagpur Railway came next to it. This was due to the fact that Mirzapur is situated on the East Indian Railway, and it receives both stick lac (raw material) and despatches manufactured lac in the shape of shellac and button lac in large quantities. The Bengal Nagpur Railway despatch stick lac to Mirzapur from the Central Provinces *viâ* Katni; and both the Bengal Nagpur Railway and the East Indian Railway bring lac into Calcutta for use in the factories at Maniktollah and Cossipore.

The following quotation from the " Notes on Industries of the United Provinces " give useful information regarding cultivation and uses of lac and about the trade and manufacture of lac.

" The magnitude of the lac industry in the provinces may be judged by the fact that in 1905-06 the imports weighed 249 thousand maunds and were valued at 139 lakhs of rupees, while the exports amounted to 164 thousand maunds valued at 155 lakhs of rupees. In the following year the imports amounted to 181 thousand maunds valued at 101 lakhs of rupees and the exports were 183 thousand maunds worth more than 165 lakhs of rupees. Mirzapur is practically the only centre of the industry in the provinces.

Notes on lac industry.

" The imports to Mirzapur are mainly in the form of the raw materia (stick lac) while the exports go in the shape of finished products like shell lac and button lac. The figures quoted above for exports exclude lac bangles and beads and lac dye, which are classed under other heads in the traffic returns. During the last three years there has been a rapid growth in the demand for shellac and button lac in the markets of the United States, Germany, United Kingdom and France. The exports of shellac and button lac have increased in comparison with stick and seed lac and the prices have in many cases been regulated by speculation.

" There is no systematic cultivation of lac in the United Provinces. It is principally collected from palas or dhak (Butea frondosa), pipal (ficus religiosa), siris (Albizzia lebek), kusum (Schleichera trijuga) and khair (acacia catechu). Manihars and other castes gather the lac from the trees, paying a royalty to the owner. With the exception of a small quantity consumed locally all the lac collected is exported to Mirzapur, where good prices are obtained. The forests in the south of Mirzapur yield a small quantity of kusum lac. About half the supplies of Mirzapur are drawn from Manbhum and adjacent districts in Bengal. The rest of the raw material comes from the Central Provinces and Berar, from the United Provinces and a little from Assam. There are two principal crops, gathered in May and October. It would appear that with more attention a much larger quantity of lac could be grown in the provinces as many of the well-known lac-bearing trees are abundant in various localities. The matter deserves the attention of enterprising landowners.

" The lac industry gives employment to a large number of men and women in Mirzapur. In 1907, there were four European factories employing nine hundred hands and thirty eight large native factories with nearly two thousand and four hundred hands. Besides this there are a number of smaller native factories, employing about a thousand hands altogether. None of the factories at Mirzapur use steam-power like the European factories at Cossipore and Maniktala in the neighbourhood of Calcutta. The processes in vogue at Mirzapur are the same in the native as in the European factories. These operations are fully described in an able monograph on lac by Sir George Watt. The different forms of lac in commerce are—

1. Stick lac.
2. Seed lac.
3. Shellac.
4. Button lac.
5. Garnet lac.

"Stick lac is the crude material, *viz.*, small pieces of twig or bark incrusted with the lac. It is received in this form in the factory where the first process carried out is the separation of the lac from the woody matter. The twigs are crushed in a mill (nowadays mostly worked with a powerful lever). The wood is then sifted by hand and with sieves and subsequently used as fuel. The lighter portion is again subdivided into granular lac and khud or particles of lac mixed with dust. This separating work is usually performed by women. The khud is sold mostly to bangle-makers. The granular lac is placed in large tubs with water and after twenty-four hours the workmen tread the material in the tubs; the colouring matter is thus extracted from the lac and passes into solution; this operation is repeated several times until a clear wash water is obtained. The first wash water is evaporated and subsequently pressed into lac dye. The lac obtained after the treading operation has been completed is called seed lac. It is thoroughly dried and the lighter portions which contain a good deal of dirt are again sifted out and sold to bangle-makers. In order to manufacture shellac, the pure seed lac is mixed with orpiment (hartal) and resin. The addition of resin lowers the melting point of the lac and a certain proportion of resin is allowed by the rules of the trade in all samples of shellac. American resin imported through Calcutta is used. The mixed lac and resin is placed in long cylindrical bags made of cotton cloth of a medium texture. The bag is heated in front of a large fire and twisted by the two men holding it. The molten lac oozes out, is scooped up by the principal workman and deftly stretched out over an inclined porcelain tube filled with hot water. It is then further stretched out by a man who uses his hands and feet to hold it at the different ends. The stretched sheet is the shellac of commerce. The best quality is orange shellac. Each well-known maker has a mark of his own, like D.C., T.N., etc.

"The inferior qualities of seed lac are usally made into button lac which differs from shellac in being set in small round pieces instead of in sheets. Garnet lac consists of thick flat pieces containing more colouring matter than either shellac or button lac. It is used mostly for making dark coloured varnishes. There is a growing demand for button lac for gramophone records.

"At one time lac dye was the chief commercial product of lac, but since the invention of coal tar dyes it has practically become a waste product, its chief uses being confined to colouring toys, and as a cosmetic for Hindu women. The fashion for lac bangles and beads is also disappearing. They are still made in small quantities in some towns like Lucknow, Ghazipur and Benares, but their use is now considered vulgar by the majority of Indian women. As has been pointed out above only the worst qualities of lac are used by the bangle-makers. I was told by a leading lac manufacturer of Mirzapur that the total consumption of good lac in India would not exceed a thousand maunds."

"The chief industrial uses of lac in this country are (1) by carpenters, cartwrights, and turners as a varnish or colour medium. Oil varnishes have so far been mostly in use, but spirit varnish is now often utilised; (2) by silver and coppersmiths and potters, bookbinders and makers of huqqa pipes both for ornamentation and as a stiffening medium; (3) for sealing wax; (4) for lacquer work or lac turnery; (5) for coloured metal ware such as produced at Moradabad. In Europe it is used extensively as a varnish and polish for furniture and metal, as a stiffening material for hats, as an ingredient in lithographic ink, as sealing wax and for gramophone records."

"No improvements in the indigenous processes of lac manufacture have suggested themselves to me. The subject requires investigation by technological experts. The trade is however at present on an unstable basis. The supply of the raw material varies from year to year and there are violent fluctuations in the prices of the finished product. The first point can be remedied only by a more systematic and widely extended cultivation of lac in the provinces. As regards the second point, it is obvious that prices in foreign markets can be controlled only if there was an adequate home demand for lac. The present consumption of lac in India is negligible. There is however a wide field for its employement in the manufacture of varnishes."

Railway rates for lac.

Shellac is generally classified 2nd class, *i.e.*, the rate charged is ½ pie per maund per mile, but in order to give Mirzapur the advantage of a lower rate to Calcutta the East Indian Railway notify that for shellac, when carried for distances of 150 miles and over, the charge would be made at rates equal to 1st class, provided carried in consignments of 270 maunds. Thus the rate on shellac from Mirzapur to Calcutta is Re. 0-13-3 per maund which would otherwise be Re. 1-3-7 per maund. The distance from Mirzapur to Howrah is 458 miles.

Stick lac is classified 1st class and there are special rates to Calcutta both from the East Indian Railway and the Bengal Nagpur Railway stations, which are lower than 1st class; for instance, the rate for stick lac from Cawnpore to Calcutta for 633 miles for consignments of 270 maunds is Re. 0-11-6 per maund (which is equal to ·22 pie per maund per mile) against the 1st class rate of Re. 1-2-1 per maund.

The late Mr. N. G. Mukerjee in his Handbook of Indian Agriculture remarked on the Lac culture as follows in 1907:—

"Lac culture is another most profitable industry; but the price of lac has varied very much within the last twenty years. Sometimes it has been as low as Rs. 25 per maund, but in recent years there has been an upward tendency, as much as Rs. 210 per cwt. having been paid this year (1907) for shellac."

Exports of lac. **The total exports of lac which consists of button lac, shellac, seed lac, and other kinds of lac from India during the years 1909-10 to 1912-13 were as follows :—**

1909-10.		1910-11.		1911-12.		1912-13.	
Quant ty.	Value	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
554,796	1,847,782	421,628	1,428,572	428,006	1,342,694	428,163	1,408,881

Out of this total the exports to the United Kingdom alone were as follows :—

1909-10		1910-11		1911-12.		1912-13.	
Quantity.	Value	Quantity.	Value.	Quantity	Value.	Quantity.	Value.
Cwts.	£	Cwts	£	Cwts.	£	Cwts.	£
137,894	460,740	110,323	393,199	80,986	307,582	102,043	327,040

The balance was exported to Germany, Holland, France, Austria Hungary and other countries.

Having regard to the prices of shell lac, the necessity for rates below the 2nd class is not apparent as the traffic can bear this rate, especially as the price so widely fluctuates whereas the railway freight is constant.

CHAPTER XXIII.

KEROSINE OIL.

Imports of kerosine oil.

India consumes a large quantity of kerosine oil (Petroleum) but the production of kerosine oil in India (including Burma) bears a small proportion to the world's production of petroleum. In 1912, India (Burma) turned out 2·09 per cent. of world's total supply while the United States produced 62·64 per cent. and Russia 19·71 per cent. Even Sumatra, Java and Borneo contributed 3·13 per cent. The principal oil field of India is the Yenangyaung field in Burma.

The oil fields of Burma are confined to a somewhat narrow tract, bounded on the west by the Arakan Yoma range and its more complex continuation the Chin and Lushai Hills, and on the east by the low Pegu Yomas and the plains of Meiktila, Kyaukse, Mandalay and Ruby Mines Districts.

India imported the following quantities of oil during 1910-11, 1911-12, 1912-13 :—

— —	1910-11.	1911-12.	1912-13.
	Gallons.	Gallons.	Gallons.
From British Empire (other than India including Burma) principally from Straits Settlement.	4,869,168	2,056,726	2,777,574
From Foreign countries	51,728,566	77,355,978	62,858,943
TOTAL .	56,597,734	79,412,704	65,636,517

Quantity taken by each province.

	1910-11.	1911-12.	1912-13.
Bengal	16,476,195	31,740,501	26,618,428
Bombay	20,445,668	24,366,033	20,400,263
Karachi	6,986,501	10,503,066	9,245,495
Madras	11,508,128	11,802,677	8,509,711
Burma	1,181,242	1,000,427	862,620
TOTAL .	56,597,734	79,412,704	65,636,517

Before kerosine oil was imported into India vegetable oils were used for illuminating purposes. Introduction of Kerosine oil made more oilseeds available for exports.

Of the imports of kerosine oil into India from foreign countries the following were the quantities from various countries in 1912-13 :—

	Gallons.
Northern Russia	2,509,004
Southern Russia	9,960,401
Roumania	4,107,439
Persia	994,911
Sumatra	863,400
Borneo	12,547,094
Atlantic Coast	31,876,532
Other foreign countries	162
TOTAL .	62,858,943

Regarding the trade in " kerosine oil " from Burma to India, the following quotation from chapter VIII of " Review of the Trade of India in 1913-14 " will give an idea of the amount of trade done between Burma and India proper :—

" The exports of kerosine oil from Burma to India proper rose to 109,000,000 gallons, or by 3,000,000 gallons compared with the previous year." So that while in 1912-13 the total imports from other parts of British Empire and foreign countries amounted to 65,636,517 gallons that from Burma alone was 106,000,000 gallons, thus Burma supplied by far the largest quantity of oil consumed in this country.

As stated in Appendix II, the Burma Railway Company does not carry any oil from the oil fields to the refineries in Rangoon, because oil is carried through a pipe line from Yenangyaung fields to Rangoon, a distance of 275 miles.

Railway traffic in kerosine oil.

The following shows the traffic in kerosine oil and the railway earnings therefrom on the undernoted railways of India :—

	1911.		1912		1913-14	
	Weight.	Earnings	Weight.	Earnings.	Weight	Earnings.
	Tons.	Rs.	Tons	Rs.	Tons.	Rs
Bengal Nagpur Railway	42,371	5,01,821	43,651	5,02,960	48,686	5,49,112
Bombay, Baroda and Central India Railway.	31,467	3,35,517	27,438	3,48,259	33,952	4,19,549
Eastern Bengal Railway	214,112	5,08,561	227,385	5,66,490	243,473	6,55,941
East Indian Railway .	122,467	11,58,904	125,180	11,39,054	130,458	12,46,766
Great Indian Peninsula Railway.	83,624	11,14,008	80,974	11,30,416	84,480	12,20,615
Madras and Southern Mahratta Railway.	82,781	6,37,446	81,637	6,11,587	89,419	6,63,126
North Western Railway	54,166	10,00,115	47,343	9,34,636	56,387	11,37,841
Oudh and Rohilkhund Railway.	27,066	1,47,012	23,154	1,39,177	29,881	1,76,131
Bengal and North-Western Railway.	37,122	1,60,470	39,876	1,75,966	44,645	1,98,568
South Indian Railway .	52,589	3,47,431	59,255	3,86,683	62,961	4,24,627

The general classification of kerosine oil is as follows :—

	Class.
At railway risk	2nd
At owner's risk	1st

But there are special rates which are lower than the first class over various railways from the ports of Calcutta, Bombay, Karachi, Madras to places in the interior, as follows :—

Railway rates on kerosine oil.

From Calcutta, East Indian Railway.

Distance from Calcutta.	Names of stations.	Rate per maund		
Miles.		Rs.	A.	P.
67	Burdwan	0	2	1
90	Katwa	0	2	8
168	Madhupur	0	4	9
219	Sahebganj	0	4	10
284	Mokameh Ghat.	0	5	5
332	Patna	0	6	11
292	Gya	0	7	0
458	Mirzapore	0	9	5
633	Cawnpore	0	10	10
720	Etawah	0	12	0
790	Agra	0	12	10
903	Delhi	0	14	0
733	Jubbulpore	0	12	0
1,026	Amballa	1	1	0

From Calcutta to Bengal and North-Western Railway.

Distance in miles from Calcutta (*viâ* Mokameh-ghat).	Stations.	Through rates *viâ* Mokameh-ghat.		
		Rs.	A.	P.
376	Chupra	0	6	11
459	Mau	0	8	6
488	Gorakhpur	0	9	0
582	Gonda	0	10	3

Distance in miles from Calcutta (*viâ* Moghalserai).	Oudh and Rohilkhund Railway Stations.	Through rates *viâ* Moghalserai from Calcutta.
		Rs. A. P.
549	Fyzabad	0 11 3
568	Rai Bareilly	0 11 10
509	Pertabgarh	0 11 7
616	Lucknow	0 12 8
680	Hardoi	0 13 10
762	Bareilly	0 13 10
818	Moradabad	0 14 8

From Bombay to Great Indian Peninsula Railway.

Distance from Bombay.	Stations.	Rate per maund.
Miles.		Rs A. P.
119	Poona	0 4 2
117	Nasik	0 4 1
292	Hotgi	0 6 8
276	Bhusaval	0 8 6
413	Badnera	0 12 4
520	Nagpur	0 13 0
505	Pipariya	0 14 9
616	Jubbulpur	0 11 0
702	Jhansi	0 14 3
839	Cawnpore	0 12 7
839	Agra	0 12 10
957	Delhi	0 15 0

It may be remarked that the rates on the same section of the Great Indian Peninsula railway are higher for shorter distances than for longer distances.

The rate to Jubbulpur is Re. 0-11-0 per maund for 616 miles against Re. 0-14-9, the rate to Piparya for 505 miles.

Another instance. The rate to Jhansi is Re. 0-14-3 for 702 miles against Re. 0-12-7 the rate to Cawnpore, 840 miles.

The Bombay, Baroda and Central India Railway rates from Bombay are as under :—

Distance in miles from Bombay.	Name of station.	Rate per maund.
		Rs. A. P.
165	Surat	0 2 1
202	Broach	0 3 3
406	Rutlam	0 12 0
613	Ajmere	0 15 10
791	Alwar	1 3 6
1,059	Fazilka	1 5 5

The Bengal Nagpur Railway carry their kerosine oil traffic from Fort Gloster (17 miles south of Calcutta), on the river Bhagirathi—

Distance from Fort Gloster.	Bengal Nagpur Railway stations.	Rate per maund.
Miles.		Rs. A. P.
531	Waltair	0 6 5
128	Balasore	0 4 0
238	Cuttack	0 5 8
185	Puruha	0 6 4
541	Rajnandgaon	0 15 6
687	Nagpur	0 13 0

As in the case of the Great Indian Peninsula Railway, the Bengal Nagpur Railway rate to Nagpur for 687 miles is Re. 0-13-0 per maund against Re. 0-15-6 per maund the rate to Rajnandgaon, 541 miles. Both the stations are on the same section of the line.

The North Western Railway rates from Karachi to their stations are as given below :—

Distance from Karachi.	North Western Railway stations.	Rate per maund.
Miles.		Rs. A. P.
920	Peshawar	1 10 1
897	Rawalpindi	1 9 2
300	Sukkur Bandar	0 8 7
853	Pathankot	1 4 3
755	Lahore	1 3 8
786	Amritsar	1 2 3
727	Ferozepore	1 2 3
684	Lyallpur	0 9 3
847	Amballa Cantonment	0 15 6
802	Jullundur City	1 1 7

The North Western Railway rates are not free from differential rates.

The Madras Railway rates from Madras to various sections of their line are as under :—

North East Line (Broad Gauge).

Distances in miles from Madras.	Names of stations.	Rate per maund.
		Rs. A. P.
265	Guntur	0 5 7
392	Samalkot	0 7 11
268	Bezwada	0 5 8
305	Ellore	0 6 4
110	Nellore	0 2 9

North West line (Broad Gauge).

Distances in miles from Madras.	Names of stations.	Rate per maund. Rs. A. P.
43	Arkonam	0 1 11
84	Remgunta	0 2 10
162	Cuddapah	0 5 0
258	Gooty	0 7 8
	Metre Gauge stations.	
448	Dharwar	0 9 8
307	Bellary	0 7 11
305	Mysore	0 7 11

The Madras Railway rates on their North East line (late East Coast Railway) are necessarily low owing to water competition, especially canals.

The classified rates for mineral and vegetable oils, *viz.*, 1st class, are at Owner's Risk, but the mineral oil is granted special rates below the 1st class rate from the ports to almost every station in India; but the special rates for vegetable oils are not many.

CHAPTER XXIV.

PASSENGER FARES.

Passenger traffic is a great contributor to the total revenues of the Railways in India, and the passenger traffic consists mainly of third class passengers; it was once remarked that it would pay the railways to pay a premium to every higher class passenger to induce him to stay away so that the room on trains might be occupied by third class passenger carriages.

The population of India took to railway travelling from the very start of the railways, although at one time grave doubts were entertained as to whether the Indian public would ever avail themselves largely of railway travelling, especially owing to caste prejudices.

Whether railway travelling will in future be as popular as has been in the past cannot be said in view of the fact that the fares on Indian Railways have been increased since the War broke out.

The justification for the enhancement in the railway fares has been that the War has prevented materials for rolling stock being available, and that it is necessary to keep reserve stock in order to meet the traffic requirements until the War is over and some time thereafter till materials and money are readily available. It was, therefore, necessary to restrict travelling.

Another reason is that owing to the railways having to carry traffic in goods in larger quantities, due to the War, such as coal for the Royal Indian Marine and for the public, which previously used to be carried by sea for instance to Bombay, the work on the railway lines has been heavier. Therefore, in order to allow of a reserve of stock being maintained and to meet the requirements of goods traffic, which requires more goods trains being run, the passenger train service has been curtailed. Hence the increase in the fares. If the low third class fares varying from 2½ to 1½ pies per mile charged to third class passengers had been retained then with lesser number of passenger trains the earnings would have naturally been low. Under such conditions, the rise in the passenger fares is justified, but whether in view of the fact that the enhancement of fares has not resulted in the passenger earnings being curtailed the existing fares should be permanently maintained is not a very easy problem to solve at the present moment.

The reasons for travelling are many, *e.g.*, on business, in search of employment, on pilgrimage, for marriage ceremonies; and labourers for tea gardens, factories, mines, and for large works also contribute towards railway revenue.

A Hindu will visit the religious shrines as often as he can, and this is evident from the large number of pilgrims that visit the various *melas*, fairs, etc., and the shrines in all parts of India. A good year for crops is also a prosperous year for the railways in passenger traffic, besides the prosperity being indicated in the carriage of increased merchandise traffic.

If the railways want to continue to carry the large pilgrim traffic they may have to reconsider the passenger fares, for it is to be borne in mind that shrines like Brindaban, Puri, Benares, Setu Bandh Rameshwaram are visited by people who hail from all parts of India, and if long distance travelling is to be encouraged the travelling power of the public is an important factor for consideration. While short distance traffic will not be affected by the increase in the fares, for labourers, traders and people in search of employment will continue to travel, because they must do so for the sake of their livelihood, it is very doubtful whether the pilgrim traffic will continue to be as large as it has been in the past. Very important *melas* will continue to be attended, but in some cases where the enhancement has been by 50 to 75 per cent. say from Rs. 5 to Rs. 7-8 or Rs. 8-12 the enhanced fares will mean hardship to poor people and may discourage them from travelling often, *i.e.*, one will visit the shrines lesser number of times in his life-time than he would with cheaper fares.

In this connection, one cannot totally overlook the past experience, which has been that every reduction in the fares has been met with an increased traffic, meaning gain to the railways in the long run. At one time, the Government, fearing that the railways would be inclined to keep the lowest class fares at a high figure, wanted to keep the control of fixing the lowest class fares in their hands, and they compelled certain reductions in third class fares over the East Indian Railway inspite of protests on behalf of the working company, but the results of the reduction were beneficial to the railway.

The figures of passenger fares over various railways, the cost of carrying passengers per mile, and the average profit per unit mile for several years have been given in Appendix V.

It is true that during recent years there has been a rise in the working expenses, which Appendix VII will show, but if the traffic increases and there remains a fair margin of profit at reasonably low rates which have hitherto been in force, or slightly higher, the greater such traffic is carried the better, for every increase in traffic will mean reduction in working expenses, which will be divided between so many more passengers. Of course no action in the matter of reverting to the old fares is suggested until normal conditions prevail, but if the decision is to retain the present fares on the experience that increased fares have not diminished the earnings although in some cases the number of passenger travelled has been less, the decision may not be a very safe one.

While it is correct, according to the report of the committee, which reported on the Rise of Prices in India, that the income of the labouring classes and of the agriculturist has increased in 10 years (*i.e.*, from 1902 to 1912), it has also been shown that the cost of living has also increased partly owing to rise in prices and partly owing to improved methods (or expensive method) of living, that is, more money has been spent on articles, which do not constitute bare necessaries of life. It may be remarked that railway transportation is one of the commodities for sale to the ryot and seeing that his income has increased and he pays a higher price for everything else it is also reasonable that he ought to pay for railway travelling at a higher price as well. How far such an argument will bear detail examination is problematical but if a railway can run more trains at a profit it will pay them to charge low fares in order to attract more traffic and this observation is made on the experience of several years past. However great might have been the rise in the wages of labourers his savings have not been great, and as travelling on marriage occasions (at least the number constituting the marriage parties) and for pilgrimages depends so largely upon savings, a high increase in the fares must affect at least such traffic.

It will, however, be noticed from the table below that taking all the Indian Railways together (including Burmah) the average lead of third class passenger traffic has been less as the railway-mileage has progressed, thus indicating the growth of short distance traffic.

Average miles travelled.

	Miles.
1890	41·06
1905	40·92
1906	40·36
1907	39·65
1908	38·65
1909	38·74
1910	37·12
1911	37·12
1913-14	37·40
1914-15	36·59
1915-16	36·60
1916-17	37·56

The average rate per mile in 1912 was 2·30 pies against 2·32 pies in 1916-17, and this also is another proof that the short distance traffic is a predominant factor in railway passenger earnings.

Therefore if higher fares, as now stand, are retained for all distances up to 75 miles (even 100 miles), and the old fares, or slightly enhanced fares, are allowed for distances beyond, the railways will stand a chance of keeping the long distance travellers to their number in the past, if not more, and the short distance traffic will pay them better earnings. The increase in short distance traffic is largely encouraged by opening of new stations and more frequent train service.

The early history of the passenger traffic and of the fares, the maximum and minimum fares sanctioned by the Government, and the progress of the passenger traffic and the gradual decrease in the fares have been already given in "General Remarks" and in Chapters I and II and are, therefore, not recapitulated here.

At a meeting held between the Agents and Traffic Managers of various railways, held in Delhi in March 1917, in order to effect a reduction in the number of persons travelling, due to curtailment of passenger train service, it was decided to increase the maximum of all classes to the following lmits :—

	Per mile. Pies.
First class	from 18 to 24
Second class	from 9 to 12
Inter class	from 4½ to 6
Third class by mail and fast trains only . .	from 3 to 4

The decision to raise the maximum per mile in all cases was not with the intention of increasing the fares immediately all round, but the power was given to increase the fares as circumstances rendered necessary.

CHAPTER XXV.

FRESH FRUITS AND VEGETABLES.

India grows almost every kind of fruits and vegetables; while tropical fruits and vegetables are grown in the plains, the cold climate of the hills helps to grow European fruits and vegetables.

Plantains and cocoanuts are grown abundantly in lands not far from the sea coast. Mangoes are found in almost every part of India, but the best kinds are found in Bombay, Guzerat and in Behar. Mangoes of Bengal and of the United Provinces are also very delicious fruits, and the largest quantity is produced by the province of Behar, which also accounts for the best and the largest amount of "leechees."

Guavas and lemon are common to almost the whole of India; Allahabad and Bilaspur (Central Provinces) guavas are however the best.

The best oranges are grown abundantly around Nagpur in the Central Provinces and in Sylhet (Assam), while sweet 'Figs' are confined to the Poona District (Bombay).

Nasik and Poona also produce excellent grapes.

Kashmir, the Northern Panjab and the Himalayas grow apples, pears, grapes, apricots, peach and other fruits.

A list of the fruits and vegetables, as published in the Agricultural Statistics of the Government of India, is given below:—

List of Fruits.

Apple.
Bel.
Bilimbi.
Cashew Nut.
Cassava.
Citron, lime or Lemon.
Cocoanut.
Fig.
Custard apples.
Grape.
Guava.
Gooseberry.
Gumberry.
Jack Fruit.
Jujube.
Kamranga.
Kirni or Khinni.
Kharbuja (melon).

List of Vegetables.

Artichoke.
Beans.
Beetroot.
Brinjal.
Cabbage.
Carrot.
Cauliflower.
Celery.
Chicory.
Cress.
Horse radish.
Elephant Foot or O'l.
Gourd.
Hibiscus (Edible) or Bhindi.
Karola.
Lettuce.
Parvar or Patal..

List of Fruits.

Kakri (melon)
Musk „
Water „
Mangoes.
Leechees.
Oranges.
Papay.
Peach.
Pears.
Pine apple.
Plantain.
Plums.
Pomegranate.
Pomelo.
Raspberry.
Sapodilla.
Strawberry.
Tamarind.

List of Vegetables.

Peas.
Potato.
Pumpkin.
Radish.
Sank alu.
Singhara or water caltrop.
Spinach.
Tomato.
Turnip.
Yams.

The acreage under fruit and vegetable cultivation of the various provinces of India is appended below :—

Area (in acres) during the year 1908-09 to 1914-15.

PROVINCES	1908-09	1909-10	1910-11	1911-12.	1912-13.	1913-14.	1914-15.
Bengal . . .	905,200	933,563	837,860	944,200	826,300	832,000	786,400
Madras . . .	1,115,469	1,120,246	1,164,631	1,172,953	1,164,356	1,195,346	1,200,227
Bombay . .	136,640	135,388	134,290	137,464	580,412	596,994	620,711
Sind . . .	41,072	40,959	42,880	42,654	41,758	40,422	41,919
Agra . . .	258,581	267,460	249,013	267,105	255,176	322,901	346,706
Oudh . . .	96,514	102,074	95,915	94,213	94,486	122,282	143,840
Behar and Orissa .	632,900	668,800	654,000	655,200	766,300	793,800	916,800
Punjab . . .	148,185	125,022	141,868	163,856	257,431	257,891	233,213
Upper Burma .	31,386	30,014	32,249	34,350	519,638	567,662	611,976
Lower Burma .	375,041	385,564	389,878	402,928	446,207	450,873	461,669
Central Provinces .	90,974	93,193	87,101	86,349	87,358	93,090	98,043
Berar . . .	18,204	17,027	16,228	13,047	11,413	12,775	14,709
Assam . . .	361,507	366,873	378,152	371,779	400,413	407,443	407,525
North-West Frontier.	8,246	5,916	4,713	5,033	9,392	18,176	26,861
Ajmer-Merwara .	260	563	458	526	556	591	502
Coorg . . .	4,143	4,582	4,320	4,547	4,628	4,510	5,761
Pagans Manpur Central India.	7	4	2	7	3	9	8
TOTAL .	4,224,329	4,297,248	4,233,564	4,896,211	5,465,857	5,721,319	5,930,620

The railway traffic in fruits (fresh) and vegetables during the following years (1911, 1912 and 1913-14) was as under :—

—	1911.		1912.		1913-14.	
	Weight.	Earnings.	Weight.	Earnings.	Weight.	Earnings
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Bengal Nagpur Railway . .	12,773	1,01,529	13,203	1,12,175	15,568	1,26,559
Bombay, Baroda and Central India Railway.	33,264	1,75,196	32,427	1,37,786	37,287	2,04,826
Eastern Bengal Railway . .	32,068	1,49,065	28,963	1,32,117	38 419	1,61,773
East Indian Railway . .	14,931	1,23,617	20,542	1,90,645	15,436	1,34,308
Great Indian Peninsula Railway	47,742	3,69,110	37,556	3,10,753	44,780	3,55,631
Madras and Southern Mahratta Railway.	69,243	4,60,792	83,858	5,65,943	93,487	6,12,754
North Western Railway . .	44,141	3,33,489	58,475	4,27,651	64,839	4,33,225
Oudh and Rohilkhund Railway	14,837	60,436	16,168	62,258	18,955	83,505
Bengal and North-Western Railway.	76,371	1,70,604	101,933	1,80,060	99,868	2,56,759
South Indian Railway . .	66,604	4,36,188	74,862	4,86,329	79,109	4,87,944

These figures represent the traffic carried by goods trains, packed in flimsy wicker work baskets of split bamboo except that cocoanuts are sent packed in bags.

The Parcels traffic of Indian Railways consists of a very large quantity of fruit and vegetables, which are carried at half parcel rates.

The largest traffic by goods trains was that of the Bengal and North Western Railway, which was principally in mangoes and leechees produced in Behar. There has been in existence for some time past the "Bengal Fruit Preserving Company" with their works at Muzaffarpur, which send out mangoes (peeled and cut into slices) and leechees (peeled) in syrup packed in tins.

Next comes the railways of Southern India, *viz.*, the Madras and Southern Mahratta and the South Indian Railways which carry largely plantains, cocoanuts and vegetables.

The North Western Railway stands fourth, but its traffic is chiefly in the fruits of the Panjab, *viz.*, apples, pears, apricots, grapes, etc.

The Railway rates by passenger trains for fruits and vegetables at owner's risk are half the following parcels rates :—

Distance in miles.				Weight.			
				Exceeding 5 seers or exceeding 1 cubic foot but not exceeding 10 seers or 2 cubic feet.	Exceeding 10 seers or exceeding 2 cubic feet but not exceeding 20 seers or 4 cubic feet.	Exceeding 20 seers or exceeding 4 cubic feet but not exceeding 30 seers or 6 cubic feet.	Exceeding 30 seers or exceeding 6 cubic feet but not exceeding 40 seers or 8 cubic feet.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
		Not exceeding	25	0 4 0	0 4 0	0 4 0	0 4 0
Exceeding	25	but not exceeding	50	0 4 0	0 4 0	0 8 0	0 8 0
,,	50	,,	75	0 4 0	0 8 0	0 12 0	0 12 0
,,	75	,,	100	0 4 0	0 8 0	0 12 0	1 0 0
,,	100	,,	125	0 8 0	0 12 0	1 0 0	1 4 0
,,	125	,,	150	0 8 0	0 12 0	1 0 0	1 8 0
,,	150	,,	175	0 8 0	1 0 0	1 4 0	1 12 0
,,	175	,,	300	0 8 0	1 0 0	1 8 0	2 0 0
,,	300	,,	325	0 12 0	1 4 0	1 12 0	2 4 0
,,	325	,,	350	0 12 0	1 4 0	2 0 0	2 8 0
,,	350	,,	375	0 12 0	1 8 0	2 4 0	2 12 0
,,	375	,,	450	0 12 0	1 8 0	2 4 0	3 0 0
,,	450	,,	475	1 0 0	1 12 0	2 8 0	3 4 0
,,	475	,,	500	1 0 0	1 12 0	2 12 0	3 8 0
,,	500	,,	525	1 0 0	2 0 0	3 0 0	3 12 0
,,	525	,,	600	1 0 0	2 0 0	3 0 0	4 0 0
,,	600	,,	625	1 4 0	2 4 0	3 4 0	4 4 0
,,	625	,,	650	1 4 0	2 4 0	3 8 0	4 8 0
,,	650	,,	675	1 4 0	2 8 0	3 12 0	4 12 0
,,	675	,,	750	1 4 0	2 8 0	3 12 0	5 0 0
,,	750	,,	775	1 6 0	2 12 0	4 0 0	5 4 0
,,	775	,,	900	1 6 0	2 12 0	4 2 0	5 8 0
,,	900	,,	925	1 9 0	3 0 0	4 6 0	5 12 0
,,	925	,,	950	1 9 0	3 0 0	4 10 0	6 0 0
,,	950	,,	1050	1 9 0	3 2 0	4 12 0	6 4 0
,,	1050	,,	1075	1 12 0	3 6 0	5 0 0	6 8 0
,,	1075	,,	1100	1 12 0	3 6 0	5 4 0	6 12 0
,,	1100	,,	1125	1 12 0	3 8 0	5 6 0	7 0 0
,,	1125	,,	1200	1 12 0	3 8 0	5 6 0	7 2 0
,,	1200	,,	1225	2 0 0	3 12 0	5 10 0	7 6 0
,,	1225	,,	1250	2 0 0	3 12 0	5 14 0	7 10 0
,,	1250	,,	1400	2 4 0	4 8 0	6 0 0	8 0 0
,,	1400	,,	1550	2 8 0	4 12 0	6 8 0	8 8 0
Over	1550			2 12 0	5 9 0	7 0 0	9 0 0

These rates apply on through distance over two or more railways.

The rates by goods trains are—

2nd class rates (½ pie per maund per mile) at owner's risk
3rd class rates (⅓rd pie per maund per mile) at railway risk.

Besides there are wagon rates of 4 annas and 3 annas per wagon mile.

So far as the Railway rates are concerned they are cheap enough, but pilferages from baskets of fruits (whether sent by goods or by passenger trains) and damages to consignments of mangoes, leechees and even potatoes, owing to delay in transit, are not uncommon. This point has been dealt with in the chapter on "Railway Risk and Owner's Risk Rates."*

The following remarks appeared in Railway Board's Administration Report for the year 1916-17 regarding refrigerator cars :—

"In view of the success which has accompanied the carriage of perishable goods by rail in cold storage in America and other countries, it was decided to carry out experiments to ascertain the financial prospects of similar facilities in India and the class of vehicle most suited to Indian conditions. Experiments were commenced on the Eastern Bengal Railway with a self contained refrigerating vehicle from the Great Indian Peninsula Railway in conjunction with certain insulated vans from the North Western Railway. It became evident early in the experiments that self contained refrigerating vehicles similar to the Great Indian Peninsula Railway car would be unsuitable having regard to the heavy first cost, the difficulty of repairs and maintenance, the loss of carrying capacity and the high proportion of unremunerative dead weight to be hauled. It was decided, therefore, to concentrate on experiments with insulated vans cooled by ice. The trial with the North Western Railway vans of this type, however, indicated defects in their insulation and therefore the construction of new experimental insulated vans with different classes of insulation was undertaken, with a view to further experiments being carried out in the hot weather of 1917."

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* Appendix VIII.

CHAPTER XXVI.

MINERAL CLASS GOODS.

On Indian Railways the mineral class comprises of the following articles :—

Ballast.
Banglestone.
Coal.
Cement.
Chalk.
Red earth (Gairoo Mutti).
Yellow earth (Multani mutti).
White earth (Khari mutti).
Fire clay.
Flint.
French chalk.
Gravel.
Iron ore.
Kunkur.
Lime.
Red stone.
Sand.
Slag.
Slates.
Rough stone.
Stone of any description
Stone mills of sorts.

Rates for " Coal," " Iron Ore " and " Manganese Ore," which form the principal items of mineral traffic in India, have already been dealt with.

Cement rates require special comment in view of the fact that cement works have been started in India, for instance at Lakheri (in Central India, in Bundi State) and at Katni in the Central Provinces ; Lakheri is a station situated on the Nagda Muttra section of the Bombay, Baroda and Central India Railway.

The ordinary rate for cement is at the following mineral class scale (which applies on the Bombay, Baroda and Central India Railway), and the rates on other lines are also more or less near this scale of rates.

For distances—

	Pie per maund per mile.
1 to 100 miles	·20
101 to 200 „	·166
201 to 500 „	·143
above 500 „	·10

Bundi cement is, however, given the advantage of the following lower rates.

For distances—

	Pie per maund per mile.
1 to 100 miles	·18
101 to 250 „	·15
251 miles and beyond	·11

For ready reference rates calculated under both the scales are given below :—

—	Col. 1. (Applicable to mineral class goods generally.)	Col. 1. (Applicable to Bundi cement.)
	Rs. A. P.	Rs. A. P.
For 50 miles	0 0 10	0 0 9
„ 100 „	0 1 8	0 1 3
„ 200 „	0 3 1	0 2 4
„ 300 „	0 4 3	0 2 9
„ 400 „	0 5 5	0 3 8
„ 500 „	0 6 8	0 4 7
„ 700 „	0 8 4	0 6 5
„ 800 „	0 9 2	0 7 4
„ 900 „	0 10 0	0 8 3
„ 1000 „	0 10 10	0 9 2

The railway rates on cement are cheap* on the Bombay, Baroda and Central India Railway for the country manufactured article, but the unfortunate part is that the scale rates on mineral class goods and on cement are applicable on local distances only over each railway, and the effect of such rates applying on local distances is to raise the rates on long distance traffic carried over two or more railways—a point which has been fully dealt with in the chapter on "Through Rates."

At one time (just after the introduction of the low rates for coal, which are in force at the present moment), there was a proposal to introduce a similar scale of rates for "Minerals" other than coal, but mainly on the ground that the traffic involved was not large enough to warrant the reduction the proposal was not given effect to.

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*It has been pointed out to me that while the rates for manganese ore are down to $\frac{1}{10}$th pie per maund per mile those for cement are higher. Cement is cheaper than manganese ore, and for the encouragement of manufacture of cement in India low rates are needed, especially as reduction in price of cement would lead to its extensive use, *e.g.* in lining irrigation canals to prevent wastage of water. There are now Cement Works at Madras, Bundi, Porbandar and Katni.

CHAPTER XXVII.

TOBACCO.

The total tobacco area in India comes to 1,056,349 acres, the figure being that for 1914-15. Tobacco industry in India is both agricultural and manufacturing; tobacco, mixed with treacle, is smoked very largely in Northern India, including Bengal. In Southern India, dry tobacco is rolled in leaves and smoked in the same way as cigarettes are smoked.

Bengal commands the largest area, next comes Madras, and Behar with an acreage, which has varied between 116,300 and 105,500 acres, ranks third.

A large quantity of tobacco is exported from India (proper) to Burmah in a crudely cured form for manufacture into cigars, which are known as "Burmah Cigars" or "Burmah Cheroots"; cigars are also manufactured in Southern India, and are known as "Trichinopoly Cigars."

During recent years, the manufacture of cigarettes has been taken up in this country, and small works have sprung up in Bengal and in other provinces, but in Behar an Anglo-American Syndicate have set up a large cigarette factory with up-to-date machinery at Monghyr.

Yet India imports a very large amount of cheap American cigarettes.

The railway rates for manufactured tobacco, whether it is the production of the country or of any foreign land, are the same, *viz.*,

Tobacco, country manufactured . . .	3rd class railway risk. 2nd class owner's risk.
Tobacco, imported	3rd class at railway risk. 2nd class at owner's risk.

But unmanufactured (but crudely cured) Indian Tobacco is carried at 1st class rate.

The 3rd class rate equals to ⅔rd pie per maund per mile,

The 2nd class rate equals to ½ pie per maund per mile,

and the 1st class rate is equivalent to ⅓rd pie per maund per mile.

Area (in acres) during the years 1908-09 to 1914-15.

Province.	1908-09.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15
Bengal . . .	370,600	325,324	323,669	306,300	313,700	319,400	322,700
Madras . . .	173,703	200,931	221,677	192,205	205,599	207,819	227,182
Bombay . . .	71,404	91,037	91,880	68,286	71,942	89,401	88,467
Sind . . .	6,731	10,536	9,999	9,766	7,456	8,404	9,945
Agra . . .	59,157	70,128	79,627	75,778	68,135	60,797	85,159
Oudh . . .	9,006	15,722	18,238	17,657	13,554	14,611	17,621
Bihar and Orissa .	110,600	115,100	114,200	116,300	106,300	115,800	105,500
Punjab . . .	50,351	56,637	64,052	76,430	47,451	49,425	63,887
Upper Burma . .	18,300	36,536	36,766	29,670	29,670	34,003	32,539
Lower Burma . .	40,356	45,730	60,299	59,228	58,458	61,293	56,522
Central Provinces .	11,365	16,328	17,646	17,958	13,216	12,061	15,935
Berar . . .	16,630	15,286	12,794	8,489	11,453	14,146	13,318
Assam . . .	10,073	6,779	7,585	8,384	8,992	8,431	9,512
North-West Frontier.	6,406	7,316	9,174	12,447	8,737	5,421	7,314
Ajmer-Merwara	4	89	36	7	40	2	25
Coorg	15	58	40	38	23	34	11
TOTAL .	953,712	1,013,352	1,067,682	998,043	964,726	1,001,710	1,056,349

CHAPTER XXVIII.

MATCHES.

A great deal has been said in connection with the failure of the Ahmedabad Match Factory, which some attributed to the railway rates on the part of the Bombay, Baroda and Central India Railway being higher for the Indian manufactured article than for the imported article. Whether the failure was due to this reason or not it is difficult to say. In the Indian Forest Memoirs, Volume II, Part I, Economic Product Series, however, the chief reasons ascribed for the failure of match factories in India were :—

(1) the wrong choice of factory sites and unsuitable wood;
(2) absence of expert advice; and
(3) the price of chemicals used in match factories being dearer in India than in other match manufacturing countries.

The general classification of Matches is :—

Fourth class at owner's risk; or equal to ·80 pie per maund per mile.

Fifth class at railway risk, or equal to 1 pie per maund per mile.

But there are special rates from the ports (for the imported matches naturally) to the interior. For instance the rate from Howrah to—

Patna . . .
Luckeserai . .
Monghyr . . .
} is 0-14-4 per maund which works out ·52, ·66 and ·58 pie per maund per mile respectively.

The rate from Patna is at railway risk while the other two are owner's risk rates. These rates may be attributed to river competition.

There are also special rates for the following places, which compare as under with the ordinary 4th class rates—

—	Special rates from Howrah.			Ordinary owner's risk rates from Howrah; 4th class.		
	RS.	A.	P.	RS.	A.	P.
Agra	2	4	2	3	7	4
Farrukhabad	2	7	5	3	6	3
Hathras	2	3	7	3	7	5
Mirzapore	1	10	8	2	0	4

The justification on the part of the Bombay, Baroda and Central India Railway for special low mileage rates for Matches from the Bombay port was perhaps the quotation of the above special rates from Calcutta by the East Indian Railway.

As has already been argued in the chapter on " External and Internal Trade," although there is some sort of justification for the low rates from the ports to the interior because of large number of wagons returning empty in this direction (which however is not the case in the case of the traffic from the direction of Bengal to Northern India) there is no case that the imported articles can not bear a higher rate. It has not been shown that the traffic from Bombay to Northern India in Matches will not move in the absence of the lower rates than 4th class. Simply because Calcutta granted lower rates for imported matches, Bombay granted the same rates.

If however similar rates to those from Calcutta were considered essential on the part of the Bombay lines from Bombay it is questionable why similarly calculated rates could not be granted from Ahmedabad for the locally manufactured articles. It may be true that on the ground that the lead from Bombay being greater than from Ahmedabad the Bombay Baroda line will justify lower mileage rates from Bombay than from Ahmedabad, but on the ground that imported traffic receives better consideration in the matter of low mileage rates and because of the factor in the matter of traffic in matches from Ahmedabad to upcountry is in the direction in which empties are returning, as in the case of Bombay traffic, Ahmedabad might claim similar consideration, as the imported traffic from Bombay. But an examination of the recently notified rates for matches, however, shows that for despatches from Ahmedabad the rates are cheaper than those from Bombay, where the distances from Ahmedabad are less, although the Bombay rate may be based on a lower rate per maund, due to the longer bad on Bombay traffic.

CHAPTER XXIX.

MICA.

India ranks first amongst the principal mica-producing countries of the world, and the percentage of its output to the world's production of Mica is over 70 per cent ; then come the United States of America and Canada.

More than half the Indian production is contributed by Behar and Orissa—the mica mines lying in the districts of Hazaribagh, Gaya and Monghyr. Madras contributes a little less than 25 per cent, chiefly from the Nellore District, Ajmer and Marwara the remaining 4 per cent. Mysore produced a small quantity for the years 1909 to 1913.

A statement is given below showing the production of mica for the years 1909 to 1913 :—

Name of Province.	1909.	1910.	1911.	1912.	1913.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Behar and Orissa . .	22,084	18,356	25,225	29,653	32,579
Madras	8,948	3,856	7,462	13,484	10,861
Rajputana . . .	1,871	757	1,191	650	1,953
Mysore	..	..	18	45	29
TOTAL .	32,903	22,699	33,896	43,832	45,422

The exports of Indian mica during the years 1910-11 to 1913-14 were as under :—

	Cwts.
1910-11	42,593
1911-12	48,871
1912-13	66,574
1913-14	53,891

Comparison of figures of export with those of production shows that there has been an excess of exports over production. This is due to the fact that all the mica raised does not figure in the returns and that under-statement is employed as a means of evading royalty.

Except for the period 1913-14 there has been a rise in the quantity exported due to the *following reasons* :—

"The increase is largely due to the invention of *micanite*,* *in which* small and inexpensive sheets of mica are cemented together with shellac under pressure, with the production of large sheets costing much less than the natural sheets of equal size. The decreased cost of this material led to the increased application of mica in the arts, especially for electrical insulation. Further—more scrap mica, formerly thrown away, is now ground up and used for boiler and pipe lagging, as a lubricant and for wall paper and paints."

Of the quantity exported the share of the United Kingdom amounting to 59·0 per cent., but much of the mica sent here is sold for transmission to the continent and America.

The mica sent direct to America brought a higher price than that sent to other countries, for instance the price of 1 cwt. of mica in the United Kingdom was £5·17 while that in the United States was £5·26.

Now as to railway rates ; the General Classification of mica is second class (½ pie per maund per mile), and the following are the special quotations for mica over the East Indian Railway and the Bombay, Baroda and Central India Railway.

Distance to Calcutta.	Station.	Rate per maund.	Rate per maund per mile.
Miles.		Rs. A. P.	Pies.
228	Jhajha	0 4 9	·25
245	Kodarma	0 4 9	·23
206	Giridih	0 4 9	·27
305	Nawadah	0 4 9	·18

Through rates :—

Station.	Rate per Maund.	E. I. R.	B., B. & C. I. R.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Ajmere	1 7 9	1 1 0	0 6 9
Beawar	1 8 8	1 1 0	0 7 8
Sendra	1 8 11	1 1 0	0 7 11

The East Indian Railway proportion of the through rates works out to ·26 pie per maund per mile.

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* Micanite is manufactured in the East Indian Railway Workshops at Jamalpur, and also been made experimentally at Kodarma, in Hazaribagh District.

The Bombay, Baroda and Central India Railway proportions work out to ·34 pie per maund per mile from Ajmer and Beawar for 235 and 268 miles respectively.

The following are the Bombay, Baroda and Central India Railway rates to Bombay :—

Distance to Bombay.	Station.	Rate per maund.			Rate per maund per mile.
Miles.		Rs.	A.	P.	Pies.
613	Ajmere	1	0	4	·32
581	Beawar	0	15	2	·31
557	Bhilwara	1	0	0	·34
564	Mandal	1	0	3	·35
625	Nasirabad	1	0	3	·31
572	Sendra	0	14	11	·31

CHAPTER XXX.

SALT.

Salt is very largely in demand, and the people of India being poor cheap salt is essential. Cattle are also given salt.

The use of imported salt is chiefly confined to Bengal and Assam, and the average yearly imports of salt during 1908-09 to 1913-14 were from—

	Tons.
United Kingdom	164,541
Aden	92,295
Spain	91,509
Arabia	65,066
Egypt	57,162
Germany	56,833
Italian East Africa	23,875
Other countries	1,018
AVERAGE ANNUAL TOTAL	552,299

Compared with the period 1903-04 to 1907-08, there was an increase in imported salt, as the annual average quantity imported was 484,940 tons in 1903-04 to 1907-08.

There has also been an increase in the production of salt in India, as in 1909 the production was 1,188,073 tons, while in 1913 it was 1,299,281 tons.

The increased out-put as well as increased import of foreign salt were due to its greater demand consequent on the reduction of Re. 1 per maund in the salt tax. The salt manufactured in the country and imported by sea amounted annually to over 1¾ million tons. The consumpton thus amounted to 13½ lbs. per head of the total population.

Bombay and Madras are the chief centres for the manufacture of sea salt, and lake salt is obtained from Rajputana, Coast of Cutch and Sind, *viz.*, Sambhar, Didwana and Pachpadra. The distribution of Sambhar salt extends to the Central Provinces and Behar in spite of the influx of foreign salt.

The Pachpadra salt not only serves its own area but finds market in the United Provinces and in Central India.

Rock salt is obtained from the Punjab salt range, Kohat in the North-West Frontier Province, and Mandi State. The distribution of this salt occupies the whole of the Cis-Indus Punjab. It is consumed to a considerable extent in the country east of the river

Gogra and in the Eastern Districts of the North-West Provinces. This salt is also used by the people as a condiment, medicinally, and for religious purposes. Among Hindus it is used everywhere in small quantities throughout Northern India.

Kohat Salt.—The city of Peshawar is the principal mart for this salt. A considerable proportion of the salt here is exported across the borders to meet the wants of the trans-border tribes.

Mandi Salt.—The salt is consumed in the British District of Kangra (including its sub-division of Kulu) and Simla, and the Hill States which import it are Mandi, Suket, Bilaspur, Rampur, Bushahr and Chamba.

Railway Traffic in Salt and rates therefor.

A statement is appended below showing details of salt traffic carried by different railways during 1912 and the earnings derived therefrom :—

Railway.	Quantity. Tons.	Earnings. Rs.
Bengal Nagpur	136,943	8,99,559
Bombay, Baroda and Central India	186,887	6,86,748
Eastern Bengal	106,223	5,12,174
East Indian	309,307	13,75,853
Great Indian Peninsula	259,026	23,64,723
Madras and Southern Mahratta	150,509	10,23,203
Nizam's Guaranteed State	36,779	1,93,193
North Western	154,787	9,71,547
Oudh and Rohilkhund	59,892	3,39,523
South Indian	135,731	5,52,373
Assam-Bengal	33,600	1,24,724
Bengal and North-Western	127,396	5,60,890
Jodhpur Bikaneer	44,663	2,11,494
Rohilkhund and Kumaon	31,176	1,32,934
Hengoli Branch and Hyderabad Godavari Valley Railway	15,850	1,22,420

At the time the Government sanctioned the revised minimum rates for coal, a proposal was made by the late Sir Edward Baker, the then Finance Minister, for the adoption of the coal rates for salt. This proposal received a good deal of attention both on the part of the railways and of the Railway Department of the Government of India, and it was held that the proposed reduced rates were not needed, and if at all introduced would involve a very heavy loss in the revenue as there would not be a corresponding rise in the traffic. Salt rates were, however, reduced to a certain extent.*

G. I. P. Ry.

The principal salt despatching stations on the Great Indian Peninsula Railway and the weight of traffic despatched therefrom in 1912 were :—

	Maunds.
1. Dadar	746,840
2. Thana	1,414,314
3. Karla	477,349
4. *Viâ* Idgah (from Sambhar-Rajputana-Malwa Railway)	546,674
5. *Viâ* Dadar (from Phaynder)	2,215,393

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* In fast, the Railway Board had issued a circular embodying the minimum rates for Salt on the same basis as for coal, but this was kept in abeyance for a year and then withdrawn.

The scale rate for salt on the Great Indian Peninsula Railway is :—

Pie per maund per mile	For distances.
·33	1 to 150 miles.
·50	151 to 400 „
·25	401 to 800 „
·20	801 and beyond

The weight of traffic from Dadar to *viâ* Poona was 136,288 maunds. This traffic was for the Madras and Southern Mahratta Railway stations. The Great Indian Peninsula Railway proportions of the through rates varied between Re. 0-3-1 and Re. 0-1-5. The average rate worked out to Re. 0-1-9 which on the distance from Dadar to *viâ* Poona, 114 miles, comes to ·18 pie per maund per mile. The weight of traffic from Dadar to *viâ* Nagpur was 169,520 maunds, and the present rate for this is Re. 0-9-2 per maund which works out to ·21 pie per maund per mile.

The despatches from Thana were chiefly to—

Distance in miles.	To	Weight.	Rate per maund.	Pie per maund per mile.
		Maunds.	Rs. A. P.	
500	*Viâ* Nagpur . . .	101,677	0 9 2	·22
99	*Viâ* Poona	278,686	0 1 0 (Average rate)	·21
142	*Viâ* Manmad . . .	233,920	0 3 11	·33
272	*Viâ* Hotgi	205,515	0 4 8 (Average rate)	·205
356	*Viâ* Wadi	145,791	0 4 4 (Average rate)	·15

The Great Indian Peninsula Railway proportions of the special through rates from Thana to *viâ* Poona for Southern Mahratta Railway stations vary between Re. 0-1-8 and Re. 0-2-11 per maund. In the case of *viâ* Hotgi the special through rates vary between Re. 0-3-11 and Re. 0-6-6.

The bookings from Karla were to :—

Distance in miles.	To	Weight.	Rate per maund.	Pie per maund per mile.
		Maunds.	Rs. A. P.	
511	*Viâ* Nagpur	62,244	0 9 2	·21
153	*Viâ* Manmad . . .	52,089	0 3 10	·3006
110	*Viâ* Poona	110,867	0 1 9 (Average rate)	·19
283	*Viâ* Hotgi	60,424	0 4 6 (Average rate)	·19

The Great Indian Peninsula Railway proportions of the special through rates from Karla to *viâ* Hotgi vary between Re. 0-3-9 and Re. 0-6-5, whereas for *viâ* Poona the proportion of the special through rates vary between Re. 0-1-6 and Re. 0-2-11.

The despatches from *viâ* Idgah, Agra, *i.e.*, traffic in Sambhar salt, were to :—

Distance in miles.	To	Weight.	Average rate per maund.	Pie per maund per mile.
		Maunds.	Rs. A. P.	
803	Bengal Nagpur Railway *viâ* Nagpur.	336,472	0 9 1	·13
868	Madras and Southern Mahratta Railway *viâ* Poona.	301,138	0 1 11	·26
1030	Nizam's Guaranteed State Railway *viâ* Wadi.	593,617	0 6 4	·073
191	Lalitpur	60,594	0 5 9	·36
646	Akola	59,094	0 8 3	·15

The traffic from *viâ* Dadar (Bhayndar) to the important stations were :—

Distance in miles.	To	Weight.	Rate per maund.	Pie per maund per mile.
		Maunds.	Rs. A. P.	
516	*Viâ* Nagpur	336,472	0 10 9	·25
115	*Viâ* Poona	301,138	0 2 0 (Average rate)	·20
372	*Viâ* Wadi	593,617	0 6 8	·21
426	Chanda	47,566	0 11 3	·32
349	Gulbarga	53,300	0 7 9	·27
359	Akola	59,094	0 8 4	·28

The Great Indian Peninsula Railway proportions of through rates from *viâ* Dadar to *viâ* Poona vary between Re. 0-3-1 and Re. 0-3-5 per maund; similarly in case of traffic from *viâ* Dadar to *viâ* Wadi the proportions of through rates vary between Re. 0-7-6 and Re. 0-3-1.

N. W. Ry. On the North Western Railway the following is the basis of scale rates for salt :—

Pie per maund per mile.	For distances.
⅓th . . .	For the first (and up to) 150 miles
¼th . . .	For extra distances above 150 miles, not exceeding 300 miles, to be added to the charge for 150 miles.
⅕th . . .	For extra distances above 300 miles, not exceeding 450 miles, to be added to the charge for 300 miles.
⅙th . . .	For extra distances above 450 miles to be added to the charge for 450 miles.

The principal salt despatching stations on the North Western Railway are shown below as well as the weight of traffic despatched therefrom :—

1. Bhera and Khewra Branches.
2. Kohat with out-agency.
3. Stations on the Mari Attock Railway.
4. Stations on the Lala Musa—Kundian and Kundian Shershah sections.
5. Kashalgarh Branch.

6. **Karachi and Kiamari.**
7. **Sukkur main and Bunder.**

and the traffic was mainly despatched to

	Weight in maunds of traffic in 1912.	Average rate per maund. Rs.	A.	P.
1. Rawalpindi and Arsenal	249,641	0	3	6
2. Peshawar City and Cantt.	133,897	0	1	9
3. Jullundur Cantt. and City	108,329	0	4	0
4. Phagwara	105,286	0	3	9
5. Saharanpur and *viâ*	104,961	0	3	5

On the Bengal Nagpur Railway the following scale of rates is in force :— *B. N. Ry.*

Per maund per. mile.	For distances.
1/3rd	1 to 300 miles
8/27th	301 to 375 ,,
29/108th	376 to 400 ,,
13/54th	401 to 450 ,,
2/9th	451 to 475 ,,
7/36th	476 to 525 ,,
5/27th	526 to 550 ,,
17/108th	551 to 600 ,,
1/9th	601 miles and beyond.

The outward traffic in salt on the Bengal Nagpur Railway is from the following stations :—

From	Tons.	Average rate earned per maund Rs.	A.	P.
Naupada Junction	21,700	0	2	9
Calcutta Steam Navigation Company *viâ* Shalimar	32,647	0	4	2
Great Indian Peninsula Railway *viâ* Nagpur	24,777	0	5	7

The following are scale rates for salt over the Madras and Southern Mahratta Railway :— *M. & S. M. Ry.*

Rate per maund per mile. Pie.	For distances
⅓rd	1 to 75 miles.
¼th	*Plus* for distances 76 to 150 miles.
⅕th	,, ,, 151 to 225 ,,
⅙th	,, ,, 226 to 300 ,,
⅐th	,, ,, 301 to 400 ,,
⅛th	,, ,, 401 to 500 ,,
⅑th	,, ,, 501 to 600 ,,
⅒th	,, ,, above 600 ,,

Over this railway salt is largely booked from Madras, Chinna Ganjam, Singryakonda and Tada, and the average rates work out as under :—

	Weight in maunds.	Average rate per maund. Rs. A. P.
Madras	1,510,144	0 3 2
Chinna Ganjam	265,320	0 1 11
Singrayakonda	162,661	0 4 5
Tada	103,769	0 5 9

E. I. Ry. On the East Indian Railway the following scale of rates is applied to salt traffic :—

	Pie per manud per mile.
For first 100 miles	·323
For extra distances above 100 miles and up to 450 miles	·17
For extra distances above 450	·12

The imported salt traffic of this railway is booked from the Khidderpore Docks and Howrah (Sulkea Salt Golah) and most of this traffic is carried to stations up to Moghalserai; beyond this the sphere of the country salt comes in. This is due to the fact that the Sambhar salt lake is near the United Provinces and the people of this province prefer using country salt to imported salt.

In 1912, the heaviest despatches from Howrah and the Khidderpore Docks were to *viâ* Mokameh Ghat and the weight of traffic was 81,190 tons and the average rate per maund worked out to Re. 0-3-8. There are special quotations for salt from Howrah and Khidderpore Docks to Bengal and North-Western Railway stations *viâ* Mokameh Ghat and the East Indian Railway proportions of through rates vary between Re. 0-2-9 and Re. 0-3-4.

O. & R. Ry. On the Oudh and Rohilkhand Railway the scale rate for salt is based at ⅛th pie per maund per mile.

The receipts of this traffic were chiefly from :—

	Maunds.
1. Lake salt from Sambhar (*viâ* Cawnpore)	488,814
2. Rock salt from North Western Railway (*viâ* Saharanpur)	532,639
3. Lake salt from Rajputana-Malwa Railway (*viâ* Ghaziabad and *viâ* Delhi)	375,803

B. B. & C. I. Ry. On the Bombay, Baroda and Central India Railway the following scale of rate is charged for salt traffic :—

Pie per maund per mile.	For distances.
0·23	1 to 100 miles.
0·20	101 to 300 „
0·10	301 to 500 „
0·06	over 500 „

The weight of salt traffic carried by the Bombay, Baroda and Central India Railway in 1912 was 186,887 tons.

Sea salt is despatched from Bhaynder (near Bombay). Salt is also sent from Sambhar, Pachpadra and Kharagoda and is consumed largely in Rajputana, Central India, Kathiawar and sent to the United Provinces as well. Bhaynder, Sambhar, Pachpadra and Kharagoda are all on the Bombay, Baroda and Central India Railway.

Annual production of Indian Salt.

The average annual production of salt in various provinces in India for the years 1909 to 1913 were :—

	Tons.
Bombay and Sindh	481,879
Northern India (including Rajputana and Punjab) . .	404,280
Madras	388,431

while Bombay and Madras accounted for Sea Salt, the northern India produced Lake Salt and Rock Salt.

A point arises as to whether the rates for mineral class goods cannot be applied to Salt (the mineral class goods rates are given in Chapter XXVI), from the Khewro Salt range, for it is rock salt.

When the reduction in the rate for salt to the same basis as for coal was considered it was maintained by railways that a reduction of even 6 to 8 annas a maund meant a heavy loss to railways on the existing traffic, whereas the retail price of half a seer of salt benefited to the extent of say 1$\frac{1}{5}$pic only. It was, however, pointed out by some that a reduction of say 6 annas per maund would involve a reduction of Rs. 132-0-0 to a merchant ordering 350 maunds of salt, and he would then be able to give a little more salt for the same price even to the retail purchaser of even half a seer, which would increase the quantity for consumption by men and cattle, and thus increase the consumption and reduce the price. In any case, it was held by railways that the reduction would not benefit the railway earnings and profits.

PART III

APPENDICES

APPENDIX I.

RATES OF THE ASSAM-BENGAL RAILWAY.

The Assam-Bengal Railway is subject to competition with water transport almost throughout the whole length of its system, and this accounts for the low rates that were in operation on this railway from the very first, traces of which still remain, although during recent years there has been a free interchange of views with the Steamer Companies and it has been possible thereby to raise rates to the mutual advantage of both concerned.

The Assam-Bengal Railway have their port at Chittagong, and if that is the outlet for the whole of the export traffic that originates on that railway they will get a very good lead. But Chittagong does not export very largely. The main reason for this is that the sea freights from Calcutta and the trade conditions of Calcutta favour the latter as a port for the traffic which has its origin on the Assam-Bengal Railway, except that Chittagong exports tea which is sent direct from the tea gardens packed and ready for shipment principally to America and London through Clan Line Steamers. Chittagong exports rice to the coast ports on the Coromandel Coast and to the Laccadives, Maldives, and the Andamans. There are also some jute baling companies at Naraingan j, at Chandpur and at Chittagong, which send jute to Dundee and other places through Clan Line Steamers, but as Calcutta buys jute both for the local mills and for export and mixes jute of various places, and thus securés a better price for the mixed quality, Chittagong cannot get as much traffic as it ought to get from places close to it. There is a baling press at Chittagong, which has not been used so much for jute as for cotton.

MERCHANDISE TRAFFIC.

Dealing with the merchandise traffic, it is observed that during the year 1913-14, which was a good year for the Assam-Bengal railway, rice, tea, jute, coal, salt and kerosine oil were the most important items of traffic.

Rice.

The great portion of the rice traffic is consigned to the Chittagong Strand Road Station, where it is received in the godowns of merchants and sold gradually and despatched according to demand.

Rice is also booked locally and despatched *viâ* Tinsukia and *viâ* Chandpur, the principal despatching stations being those on the length

Singarbeel to Badarpur and Daulatganj to Harinarainpur, Ashuganj, Chanmoohani.

As already remarked, the railway rates on the Assam-Bengal Railway were originally fixed on a low basis as it was considered that in view of the steamer freights being very cheap the railway would not attract the traffic without low rates; therefore, the highest rate for grain including rice in wagon loads was fixed at $\frac{1}{8}$th pie per maund per mile, which is indeed very low when it is considered that this was the rate charged even for short hauls.

In good years (such as was in 1912) there is a large export of rice from Chittagong, whereas in years of shortage rice is imported into Chittagong by sea from Burma and then sent by rail to stations on the Assam-Bengal Railway.

In the year 1907, the Assam-Bengal Railway authorities thought it fit to enhance the rate for the imported rice instead of letting it remain at $\frac{1}{8}$th pie per maund per mile. The rate introduced in the year 1907 for rice booked from Chittagong was as follows :—

For distances up to 125 miles *plus* short distance charge	$\frac{1}{4}$th pie per maund per mile.		
Plus for any distance in excess of 125 miles up to 250 miles	$\frac{1}{6}$th	,,	,,
Plus for any distance in excess of 250 miles	$\frac{1}{8}$th	,,	,,

This enhanced scale was only applied to despatches from Chittagong, but the rate of $\frac{1}{8}$th pie remained in force both in respect of local traffic and for traffic in rice from Assam-Bengal Railway stations to Chittagong for export.

In 1913, however, the rate of $\frac{1}{8}$th pie for short distances was abolished and the following scale was introduced generally :—

From 1 to 100 miles	$\frac{1}{4}$th pie per maund per mile.		
From 101 to 150 miles	Re. 0-2-1 per maund.		
Beyond 150 miles	$\frac{1}{8}$th pie	,,	,,

This scale remained in operation until 31st December 1915 but with effect from 1st January 1916 the following scale took its place :—

From 1 to 125 miles	$\frac{1}{4}$th pie per maund per mile.	
From 126 to 250 miles	$\frac{1}{6}$th	,,
Above 250 miles	$\frac{1}{8}$th	,,

Seeing that the above scale has not diverted traffic from the railway it can safely be said that it is such as the traffic can bear. Rice traffic is subject to a terminal charge of 6 pies per maund.

During the year 1913-14, the weight and earnings from rice traffic were as follows :—

Rice in the husk (paddy) . . .	61,216 tons	Rs. 2,18,012
Rice not in the husk . . .	124,222 ,,	,, 5,40,227

Tea.

Tea is the next item of importance from the point of view of revenue. During the year 1913-14, tea brought in a return of Rs. 5,10,607 although its weight was but 41,723 tons (salt which was carried to the extent of 11,920 tons on the Assam-Bengal Railway during the same year brought a return of Rs. 1,50,316).

75 per cent. of the tea produced in Upper Assam south of the river Brahmaputra is secured to the Assam-Bengal Railway and a good portion of it is brought to Chittagong by rail for direct shipment to England and America. The Railway also gets tea for carriage to Calcutta from these parts. While tea from Sylhet and Cachar districts to Chittagong intended for direct shipment is charged a slightly higher rate, that for Calcutta market is not. The rate to Chittagong from Sylhet and Cachar was originally fixed at ·40 pie per maund per mile, but in order to encourage direct shipment a reduction of 25 per cent. was made owing to the depressed state of the industry. This low rate remained in force for a number of years, but the later prosperity induced the Assam-Bengal Railway to reconsider the rate, and with effect from 1st April 1916 it was restored to the former level, *viz.*, ·40 pie per maund per mile.

As regards tea from Sylhet and Cachar for sale in Calcutta, the Assam-Bengal Railway rates to Chandpur are lower than ·40 pie (the rate charged on traffic to Chittagong). The reason for this low rate is that while the steamer companies have rates on low basis from the Brahmaputra river stations, their charge from Chandpur to Calcutta is comparatively higher, and the Assam-Bengal Railway have naturally to keep down their rates to Chandpur or else the traffic will not come to the railway at all but will go direct from the gardens to the river stations on the Kusiyara river. From Chandpur to Calcutta the rate for tea is the same by the direct steamer despatch service *viâ* Sunderbund as by the combined river and rail route *viâ* Goalando, but the traffic is carried from Chandpur onwards to Calcutta by river in order to save transhipment at Goalando.

We have dealt with rates for tea from the Sylhet and Cachar districts and we shall now refer to the Upper Assam tea rates. This traffic comes over the hill section of the Assam-Bengal Railway. The principal traffic is *viâ* Tinsukia from the Dibru-Sadya Railway. During the year 1912 the *viâ* Tinsukia traffic alone brought the Assam-Bengal Railway a revenue of Rs. 1,36,576. The tea rate from Tinsukia to Chittagong was Re. 1 per maund for 80 lbs. of tea nett.

The steamer companies were recently approached by the Assam-Bengal Railway with a view to agreeing to an enhancement in the rate seeing that the railway was carrying the great bulk of the traffic to Chittagong and it was no gain to the steamers to keep their rates low for this traffic ; and in this view they seem to have agreed, for it has been found possible for the railway to increase the rate by about 12½ per cent. all round from the Upper Assam to Chittagong and the charge from Tinsukia to Chittagong is Re. 1-2 for 80 lbs. nett (or say one maund) which works out to about ·37 pie per maund per mile for a distance of 574 miles.

The Assam valley tea for Calcutta finds its way *viâ* Gauhati and the river steamers. The traffic is from stations of the Assam-Bengal Railway on the length from Digaru to Kampur and Jamgin to Tinsukia. The rates from these stations to *viâ* Gauhati work out to about ⅓rd pie per maund per mile. For instance, the rates from Sibsagar and Titabar to *viâ* Gauhati are Re. 0-7-0 and Re. 0-6-0 per maund for 257 and 210 miles respectively. The through rates by the rail route to Khidderpore Docks (Calcutta) *viâ* Gauhati and Amingaon are the same as those obtainable by the combined rail and river route (over the Assam-Bengal Railway and Indian General and River Steam Navigation Companies steamer despatch service) to Steamer Companies' tea transit sheds at Khidderpore *viâ* Gauhati and Sunderbunds.

According to the Assam-Bengal Railway, Goods Tariff (part II, issue No. 5), in force from 1st June 1916, the through rates compare as follows but the cargo service rates are lower :—

Rate per chest of 80 lbs.

From	To Calcutta (Khidderpore Docks) *viâ* Gauhati, Amingaon and Santahar over Assam-Bengal and Eastern Bengal Railways.	To Calcutta (Khidderpore River Steam Navigation Companies tea transit sheds) *viâ* Gauhati, and Sunderbunds by rail and despatch service.	To Calcutta *viâ* Assam-Bengal Railway and the cargo service *viâ* Gauhati.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Sibsagar Road .	1 3 0	1 3 0	0 14 3
Latekajan Siding .	1 2 0	1 2 0	0 13 2
Dufalt Siding .	1 2 0	1 2 0	0 13 1

From the same tariff it is also observed that the above rates are lower than the rates obtainable *viâ* Chandpur as the following comparison will show :—

From	To Calcutta *viâ* Chandpur over the Assam-Bengal Railway and the Steamer Companies despatch service *viâ* Sunderbunds.	To Calcutta *viâ* Chandpur and Goalando over the combined rail and river route.	To Calcutta *viâ* Chandpur and cargo service.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Sibsagar Road	1 9 9	1 9 9	1 5 0
Latekajan Siding .	1 8 8	1 8 8	1 3 11
Dufalt Siding .	1 8 5	1 8 5	1 3 8

Since these rates of 1916 tariff there has been an increase by about 12½ per cent. in the rates by mutual consent between the Assam-Bengal Railway and the steamer companies.

The feature of the tea traffic of the Assam-Bengal Railway is that while they secure to the Chittagong port the tea from the gardens when such tea is intended for direct despatch to England or America, the tea intended for local consumption in India and for the Persian Gulf trade and Russia as well as tea that is sold after being blended in the Calcutta market comes to Calcutta.

Until such time as the managing agents of the tea gardens or other people start testing and blending tea at Chittagong and make it a market for sale there is little hope of Chittagong securing most of this business.

At present the Railway Company practically do all the business in connection with the clearing and forwarding from Chittagong on behalf of the tea gardens. In the past the sea freight to England has been the same from Chittagong as from Calcutta.

Jute, raw.

The jute traffic of the Assam-Bengal Railway may be divided under the following heads :—

(1) Full pressed bales from Naraingan j and Chandpur for overseas export.

(2) Loose jute from Assam-Bengal Railway stations on the Chittagong and Badarpur districts for Chandpur and Akhaura for baling houses or ultimate despatch to Calcutta for mill consumption or for mixing and baling.

(3) Jute from baling centres from this railway to *viâ* Chandpur for Calcutta for mill consumption.

(4) Loose jute and unpressed jute from stations in the Assam Valley to Chandpur and *viâ*.

Before the jetties came into existence at Chittagong, the export traffic used to be carried by small sea going vessels (both sailing and steam). When the jetties came into existence the Assam-Bengal Railway, in order to encourage shipment *viâ* the Chittagong port, quoted a rate of Re. 0-8-0 per bale in 1896 from Chandpur to Chittagong but without any effect. Four years later they made a further reduction in the way of rebates calculated on the following basis :—

Bales.	Maunds.		Rebate.
20,000	1,00,000 but under	30,000 bales	6 pies per bale
30,000	1,50,000 „	40,000 „	1 anna „ „
40,000	2,00,000 „	50,000 „	1½ „ „
50,000	2,50,000 and upwards		2 annas.

These rates (*i.e.*, the total rates deducting the rebate) are more or less in force to-day, with this difference that the rate is Re. 0-9-0 per maund, but Re. 0-3-0 per maund rebate is granted for quantities of 1,00,000 and more despatched in a season so that the net rate is 6 annas.

The rates from Chandpur and Naraingunge are as follows :—

Jute in full pressed bales of 5 maunds each.

From	To	Per bales of 5 maunds.	Remarks.
		Rs. A. P.	
Chandpur . .	Chittagong, Chittagong Port or Strand Road.	0 9 0	In addition to this rate, an extra charge of Re. 0-1-3 per bale as jetty charge and Re. 0-4-0 per 5 maunds pucca bales as river due is levied and these charges are to be entered in invoices and receipts, except in the case of a few firms who have their Agents at Chittagong to pay the jetty charge and river dues.
Naraingan j .	Chittagong, Chittagong Port or Strand Road *viâ* wagon ferry at Ashuganj.	0 13 0	Ditto.

A rebate over the Assam-Bengal Railway on the following quantities of jute in full pressed bales of 5 maunds each is made at the end of the season from July to June inclusive :—

20,000 but under 30,000 bales	6 pies per bale
30,000 „ „ 40,000 „	1 anna per bale
40,000 „ „ 50,000 „	1 anna 6 pies per bale
50,000 „ „ 1,00,000 „	2 annas per bale
1,00,000 and upwards	3 annas per bale

This rebate is only given when jute in "Full pressed" bales is booked from a station on the Assam-Bengal Railway and from Naraingauj *viâ* Chandpur or *viâ* wagon ferry to Chittagong port for direct export to countries out of India.

The rate from Chandpur to Chittagong, including the maximum rebate, comes to Re. 0-6-0 per bale of 5 maunds or 14 pies per maund or say ·133 pie per maund per mile, which is indeed a very low rate for a commodity like jute, but it cannot be helped unless the ocean going steamer companies (Clan Line Steamers) agree to reduce their freight and thus enable the railway company to enhance their rate to the extent of the reduction made by the steamer company. While it is true that the railway company has helped the steamer companies to increase their business it is also to be admitted that but for the calling of the steamers at Chittagong the railway traffic could not have developed much, and it is doubtful whether the steamer companies will take such a step. Even if they take any action in this respect it may be in the direction of giving Chittagong a lower freight in order to counterbalance, to a certain extent, the effect of lower steamer freights from Calcutta, in order to attract more freight to Chittagong. But whether they will be so good as to let the railway swallow the reduction they make is doubtful for the steamer companies must know that for the development of traffic *viâ* the Chittagong port the railway company and the port are dependent on them. As for the railway enhancing its rates irrespective of any reduction made in the steamer freight it would perhaps not be wise for the railway to do so for there is the competition with the country crafts which can be renewed any moment and since the war has broken out more brigs have been built.

Rates for loose jute from Assam-Bengal Railway stations to Chandpur have been raised to the maximum permissible *plus* terminal.

The rates for baled jute from baling centres to Calcutta have been fixed on the basis of the maximum rates *plus* terminal for loose jute and the usual rebate in respect of baled jute only has been granted.

Rates for jute from the undermentioned stations in Upper Assam to *viâ* Chandpur are on the following basis :—

Kampur and Gauhati	·13 pie per maund per mile.
Jamunamukh	·13 „ „

The cultivation of jute in Assam valley is being extended and it would be to the interest of the Assam-Bengal Railway to encourage this traffic to Chandpur and Chittagong and low rates will not be against the interests of this railway until at least the cultivation is extensive.

The total weight of jute carried by the Assam-Bengal Railway during the year 1913-14 was 85,848 tons, which gave them an earning of Rs. 2,27,870: a very large portion of this traffic is in jute baled from Chandpur and Naraingan j to Chittagong and also in loose jute from places like Chaumuhani, Akhaura, Ashuganj to Chandpur and *viâ* Chandpur.

Coal.

Coal traffic of the Assam-Bengal Railway during 1913-14 amounted to 74,961 tons, with an earning of Rs. 1,92,073. Coal traffic is confined entirely to the requirements of the tea industry, jute presses, oil and saw mills. Coal is obtained either from the Assam Railways and Trading Companies mines at Ledo or from the Bengal coal fields, coal in the latter case being brought up by water to Chandpur and despatched onward by rail from there. In the case of coal coming up from the Bengal coal fields it is carried mainly during the slack season, special rates being quoted for the purpose of attracting this traffic to that season of the year. The following are the busy and the slack season rates from Chandpur (for Bengal coal) for all stations up to Badarpur on the north, Badarpur practically being the point, up to which Bengal coal goes. The places north thereof are supplied with coal from the north-east Assam.

Slack season rates.

(January to June each year.)

For distances up to 300 miles . .	·10 pie per maund per mile.
Plus for any distance in excess of 300 miles and up to 500 miles inclusive	·066 pie per maund per mile.
Plus for any distance in excess of 500 miles	·05 pie per maund per mile.

July to December each year.

For distances up to 400 miles.	0·15 pie	from Chandpur	to Shahatali to Badarpur including branches and Chittagong section,
Plus for any distance in excess of 400 miles.	0·10 „	from Chandpur	to stations beyond Badarpur in force throughout the year.

The collieries in North-East Assam occur in Ledo Valley. The Assam Railways and Trading Company first started operations at Makum in 1881. The average production of the Makum mines during 1910-15 was 292,934 tons a year, as compared with 279,833 tons during the previous period. The coal has the reputation of being a good fuel, and forms an excellent coke. The collieries are connected by the metre gauge railway with Dibrugarh and Saikaghat (Sadya) on the Brahmaputra river. Up to the year 1907-08 in terms of an agreement between the Inland Steamer Companies and the Assam Railways and Trading Company, all coal was brought down to Sadya and then sent onwards by water by the Brahmaputra and up the Surma Valley distribution from various river ghats.

The following rates were quoted in 1907-08 and the traffic came to the railway :—

For distances up to 300 miles . .	·11	pie per maund	per mile.
Plus for any distance in excess of 300 miles and up to 500 miles inclusive	·066	,,	,,
Plus for any distance in excess of 500 miles	·05	,,	,,

In 1911 the rates were altered to the extent of quoting alternative busy and slack season rates the former being 25 per cent. higher than the rates quoted for the slack season, which remained at the rates in force in 1907-08. Finally in 1914 the slack season rates were revised to the following extent :—

For distances up to 300 miles . .	·10	pie per maund	per mile.
Plus for any distance in excess of 300 miles and up to 500 miles . .	·066	,,	,,
Plus for any distance in excess of 500 miles	·05	,,	,,

Salt.

The salt traffic of the Assam-Bengal Railway is especially from the Chittagong port.

The total weight of salt traffic carried by this railway was 41,920 tons on which the earning of the railway was Rs. 1,50,316.

For years the salt trade of stations on the Assam-Bengal Railway was in the hands of the Calcutta merchants till the Hansa Line of steamers started bringing in Hamburg salt to Chittagong port. The trade is now almost entirely from Chittagong and the salt is all foreign salt, *i.e.*, neither Bombay salt nor Ganjam salt. In the beginning in order to attract this traffic to Chittagong port in competition with Calcutta, a rate of ⅛th pie per maund per mile was in force from 1903 to 1915, from Chittagong for all distances, but with effect from 1st January 1916 the following scale of rates for salt has been introduced :—

Distance up to 250 miles ⅛th pie per maund per mile.

For additional distances ⅛th pie per maund per mile.

With the connections that have been formed by railways, from Bhairabazar to Tangi and Mymensingh, between Chittagong and the districts of Mymensingh and Dacca it is possible for the Chittagong port and the Assam-Bengal Railway to develop salt traffic to the area lying east of the Brahmaputra, but this may not perhaps be to the interests of the Eastern Bengal State Railway if they carry salt from Calcutta to this area. It is however ascertained that salt from Calcutta goes to Naraingan j by steamers and has always done so.

Kerosine oil.

Kerosine oil is the next item of importance to the Assam-Bengal Railway. The quantity of this oil carried over the Assam-Bengal Railway during 1913-14 was 40,083 tons and the earnings therefrom were Rs. 1,49,604.

There are two sources of supply in the area served by Assam-Bengal Railway, *viz.*, the Burmah oil fields *viâ* Chittagong and the Assam oil fields at Digboi. The Burmah Oil Company started operations in Chittagong in 1898 and the following rate was quoted in order to develop this traffic :—

⅕th pie per maund per mile.

This rate continued in force until 1909 when it was revised on the follownig basis :—

⅙th pie per maund per mile.

A few alterations were made at the commencement of this year, but otherwise the rate remained at the figure quoted in 1909. The position with regard to this traffic is that it is a matter of indifference to the Burmah oil companies whether they make their supplies to these districts from Chittagong or Calcutta, but lately Indo-Burmah Petroleum Company has started depôts at Chittagong.

There are then the oil rates from the Assam oil fields. These are on a similar basis to the Chittagong rate and are rendered necessary by the fact that the Assam oil company have an alternative route by the Dibru-Sadiya Railway to Dibrugarh and thence onward by the Inland Steamer Companies.

Further, as in the case of salt, kerosine oil for stations on the Naraingan j-Dacca-Mymensingh line of the Eastern Bengal State Railway, is brought by the Steamer Companies from Calcutta to Naraingan j.

Cotton.

Cotton is at present not an important item of traffic to the Assam-Bengal railway. The total weight carried in 1913-14 did not amount to more than 2,397 tons and the earnings therefrom were but Rs. 17,800, but looking at the development that is taking place in Assam cotton it may be possible that cotton will be an important item of traffic some day. Cotton is being cultivated in almost every district in Assam. The total area under cotton cultivation in Assam was but 7,191 acres in 1906-07, but in 1910-11 the area had increased to 42,210 acres, but there has been check since 1912-13, the area recorded during 1913-14 and 1914-15 being 35,179 and 32,818 acres only. The rate charged is ¼th pie per maund per mile, which is low enough. It has been slightly enhanced by the imposition of a terminal, but the cotton is not a long stapled cotton and hitherto it did not fetch a good price. There are ginning factories at Chittagong and one was started at Chandpur by a joint stock company called the Tripura Company some years ago, but it did not do much business for it did not get sufficient cotton to gin.

Oil seeds.

Rape, mustard and tilseed are grown in districts served by the Assam-Bengal Railway. The total traffic in seeds and in oil was as follows in 1913-14 :—

	Tons.	Rs.
Rape and mustard	6,534	29,755
Tilseed	1,117	4,224
Rape and mustard oil	2,631	10,424

Oil mills have been started at Chandpur, Ashuganj, Karimganj, Gauhati, Chaparmukh, Tinsukia and Bharya.

Whereas the oilseeds get the advantage of low grain rates oil is charged at class rates.

Timber.

The extensive forest tracts in Assam ought to give the railway a large traffic in timber, but the figures are not very encouraging. The total weight of timber traffic in 1913-14 was 11,165 tons and the earnings therefrom were Rs. 43,837. The rate charged is as follows :—

Timber unwrought logs only, per 4 wheeled wagon .	0-2-0	per mile.
Timber unwrought logs only, per bogie wagon . .	0-4-6	„ „
Timber (inwrought) except logs not planed or chiselled including sleepers, beams, scantlings, rafters, doors, chowkats and planks per 4 wheeled wagon . .	0-3-0	„ „
Do. do. per bogie wagon . .	0-6-0	„ „

The rates are low enough, 0-2-6 per wagon per mile on 10 ton load would give a rate of ·11 pie per maund per mile, which is lower than the low rates charged by the Bengal Nagpur Railway on timber, but the development of this traffic is, it is feared, retarded owing to the Forest Department, for reasons not clear, not being able to push the trade. The present traffic is principally from the Nambor forests.

General remarks.

The Assam-Bengal Railway have at present no traffic agreements either with the Steamer Companies or with any railway in connection with the rating, routing and division of traffic, although the rates between Chittagong and Calcutta are fixed in terms of an agreement came to years ago. This agreement and the rates need not be dealt with here as they have been referred to in Chapter II. A rate of 6 annas per maund for the cheap commodities and of 11 annas per maund for the higher class articles are in force between Calcutta and Chittagong *viâ* Chandpur and Goalando combined service and *viâ* Chandpur and the river service *viâ* Sunderbands; the Assam-Bengal Railway proportion being Re. 0-1-10 per maund for the 6 anna rate and Re. 0-3-5 per maund in the case of the Re. 0-11-0 rate, which on a distance of 112 miles from Chittagong to Chandpur work out respectively to ·107 and ·41 per maund per mile.

Then there is the question of the traffic to and from Mymensingh and stations on the Mymensingh-Bhairab Bazar branch to Calcutta and Chittagong.

The rates from stations on this railway to the ports of Chittagong and Calcutta have been ordered by the Railway Board to be fixed on the following principle :—

(*a*) *Traffic to and from Mymensingh.*

The through rates quoted between Mymensingh and Chittagong *viâ* the Mymensingh-Bhairab Bazar line shall in no case be lower than those *viâ* Tangi, subject however to the proviso that the maxima are not infringed, and

(*b*) *Traffic to and from other stations.*

The rate per mile and terminals quoted for traffic between any stations on the Mymensingh-Bhairab Bazar line including Branches) and Chittagong shall apply, so far as the Branch line is concerned, to traffic between such stations and Calcutta or Naraingan], which may be booked *viâ* Mymensingh.

The Assam-Bengal Railway are not satisfied with this decision, who have represented to the Railway Board as follows through their Agent in India :—

" The distance from Calcutta and Chittagong to Mymensingh are as follows :—

	Miles.
Calcutta to Mymensingh *viâ* Fulchhari	323
Chittagong to Mymensingh *viâ* Bhairab and the Mymensingh-Bhairab Bazar Railway	239

It is thus seen that there is a mileage of 84 miles in favour of Chittagong. The Railway Board have, however, laid down that the rates between Mymensingh and Chittagong *viâ* Bhairab are not to be lower than the rate *viâ* Tangi *except* in the case of maximum class rates. This leaves it open to the Eastern Bengal Railway to quote a low special rate between Calcutta and Mymensingh and at the same time place Chittagong quite out of competition by charging a blocking class rate or a high special rate between Mymensingh and Tangi.

The Railway Board have thought fit to put on the restriction in rates *viâ* Tangi in order to safeguard the interests of the Eastern Bengal railway, who, owned a portion of the alternative route *viâ* Tangi for some time before the opening of the through direct route to Chittagong *viâ* Bhairab; but the distance from Mymensingh to Calcutta is 61 miles longer than to Chittagong even *viâ* Tangi. The maximum class rates between Chittagong and Mymensingh give the advantage to the direct Mymensingh-Bhairab Bazar route by reason of its 23 miles shorter length, this the Railway Board cannot prevent the Mymensingh-Bhairab Bazar Railway route from taking advantage of. It is hardly equity therefore to penalise traffic carried at special rates by ordering that the longer Tangi route will fix such rates. If the Railway Board accept the principle that a lower rate can be quoted by the direct route so long as it is a *class* rate, it is not understood why the principle is reversed because the rate may be a *special* one. It may be protecting existing railway interests it is true, but it is not logical and is at the expense of the public who are thus made to pay higher than on the mileage they can justly expect to be made to pay.

I should like it to be understood that I am not referring to the jute traffic to Calcutta which comprises the great bulk of the traffic from Mymensingh; this *must* go to Calcutta over the Eastern Bengal railway or by steamer from Jagannathganj and which the Mymensingh-Bhairab Bazar Railway and the Assam-Bengal Railway cannot compete for but to general traffic such as salt and kerosine oil and import goods. The Eastern Bengal Railway at present I believe carry a negligible quantity of salt and kerosine oil to Mymensingh direct *viâ* Fulchhari, because these commodities are carried by river to Naraingani, whence *ex* godown they are booked by rail to Mymensingh. From Chittagong however these commodities can be carried in wagon loads *without transhipment* and it is hoped by the Chittagong traders that they will capture the bulk of the Calcutta trade. The competition *from* Calcutta will be with the river steamers rather than with the Eastern Bengal Railway and the Chittagong direct route to Mymensingh should be given a free hand.

I therefore request that conditions may be laid down by the Railway Board to prevent the Eastern Bengal Railway imposing a block rate between Tangi and Mymensingh, and I do not see how this can altogether be avoided without cancelling condition (*a*) of the Railway Board's letter of the 23rd March. I have not overlooked that the Railway Board in their No. 2146-3953 of the 25th November 1915 in paragraph

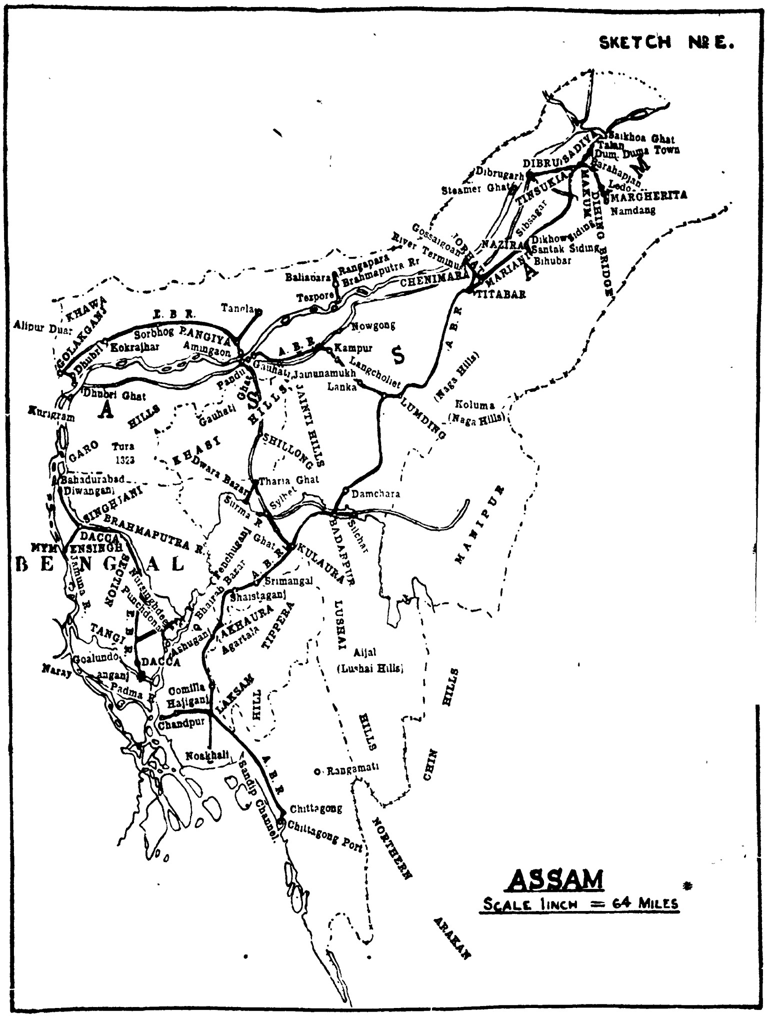
2(1) stated the intention was to maintain as far as possible the *status quo nunc* as between Calcutta and Narainganj and Chittagong, but even so the shorter distance by 84 miles which Mymensingh is from Chittagong compared with Calcutta entitles the new route to a fair consideration. In condition (*b*) of their letter of the 23rd March the Railway Board laid down that the rate per mile between stations on the Mymensingh-Bhairab Bazar Railway in the Chittagong direction shall also apply in the Calcutta direction when booked *viâ* Mymensingh, and I, therefore, wish to enquire why this principle should not apply in the case of rates between Mymensingh and Calcutta and Chittagong, that is to say it should be laid down (*i*) that the Eastern Bengal Railway should not charge a higher mileage rate between Tangi and Mymensingh than they charge between Calcutta and Mymensingh and (*ii*) it will be reasonable to remove restrictions altogether in reference to commodities in which the Steamer Companies can be shown to control the rates, and the statistics of which show they also carry the larger share of the traffic."

It is not quite unprecedented to impose the condition that the railway rate to Chittagong should be based on the longer distance *viâ* the Tangi route in order to protect the interests of the Eastern Bengal State Railway, for the case of rates between Sitapur and Bareilly has been treated similarly. In this case the new route of the Oudh and Rohilkhand Railway, a state worked state line, offers the shorter distance whereas the old route of the Rohilkund and Kumaon Railway (a company worked state line) has the longer distance. The Oudh and Rohilkhand Railway have been told not to base their rates on a lower basis than obtainable on the longer distance *viâ* the Rohilkund and Kumaon Railway even if in doing so the maximum is infringed, although the legality of such a decision is very doubtful; the Chittagong-Mymensingh rate, which has been ordered to be fixed on the distance by the longer route is, however, subject to the proviso that the maximum by the shorter route is not to be infringed. However as to the basis of rates to Narainganj, Chittagong and Calcutta from Mymensingh and stations on the Mymensingh-Bhairab Bazar Railway the fairest settlement would be somewhat on the lines on which rates to Bombay, Murmagao and Madras have been fixed.

These rates are fixed on the following basis :—

1. The shortest route either to Bombay, Madras or Murmagao to fix the rate between the forwarding stations and the port.
2. The railway or railways owning the longer distance to their port or ports shall be at liberty to quote a mileage rate equal to the mileage rate fixed by the shorter route.
3. The division of such through rates to be a matter of settlement between railways.

SKETCH No E.



ASSAM

Scale 1 inch = 64 Miles

On the above basis the rates to Calcutta, Narainganj and Chittagong may be fixed on the following basis :--

1. The shorter distance to either Calcutta, Chittagong or Narainganj to fix the rate.
2. The railway or railways owning the longer distance to the other two places to quote same mileage rates subject to the proviso that in calculating the rate to Chittagong the distance *viâ* Tangi to be taken into account and the rate thus arrived at to be applied to Chittagong except that when it infringes the maximum on the distance *viâ* Bhairab Bazar the maximum on the shorter distance to be charged, it being optional for the Eastern Bengal State Railway to make pro-rata reduction in such exceptional cases to Calcutta or to Narainganj.

APPENDIX II.

RATES OF THE BURMAH RAILWAYS.

The province of Burmah not being connected with India by railway communication has no through booking with Indian Railways, and the rates of that line are, therefore, more or less local.

In his report on Rise of Prices in India Mr. K. L. Dutt has described " Burmah as a separate country," where, he says, " the economic conditions prevailing are essentially different from those of India proper. "

The Burmah Railways comprise a mileage of 1,341 miles and the extensions of nearly 300 miles have been made known as Burmah Railways extensions and Southern Shan State Railway.

The Burmah Railway runs from North to South without any railway connections with the eastern and western districts and there being practically no roads the development of traffic is more or less confined to a permanent belt of country. Then again the population has been since olden days close to the rivers Irrawaddy and Sittang. The country is also sparsely populated. The population living within the area affected by the Railway is under 5½ millions. The need for branch lines in Burmah is strongly felt, and had it not been for the War perhaps good progress might have been made in this direction.

The water competition is strong. The Southern part of Lower Burmah is composed of the Irrawaddy Delta, which is intersected by streams and creeks—almost all tidal—and launches and country boats abound here in large numbers, and they are in competition with about 40 miles of the main line from Rangoon northwards, but affect the Bassein-Henzada-Kyangin branch line almost throughout its length.

Rangoon-Moulmein traffic was actively competed for by the British India Steam Navigation Company, but since the War the competition has practically ceased, with the result that the traffic has been secured to the railway.

On the other hand, where there is road, for instance in the Southern Shan States, the Railway is faced with road competition, although traffic has, for the greater part, been gradually secured to the Railway.

The question of building feeder roads, besides branch lines is also receiving the consideration of the local authorities of the Province.

The most formidable competitor is the Irrawaddy Flotilla Company :—The Railway runs parallel to the river Irrawaddy, which flows, west of the line, from north to south from Mandalay to the southern-most point of Lower Burmah. The section north of Mandalay is closer to the river than the section south thereof.

The Irrawaddy Flotilla Company have a very large fleet of steamers, and the railway comes in direct competition with the flotilla company at

Bassein,
Henzada,
Prome,
Myingyan,
Mandalay,
Sagaing, and
Katha.

A glance at the sketch map of Burmah Railways, which is enclosed to this appendix, will show that the river touches these stations, which means that each such station becomes a river port, and river transportation being cheap not only the traffic between such stations is affected, but the river becomes the method of distribution of traffic between Burmah Railway stations near these river side places, thus giving the railway short leads only.

The competition with river transportation became very acute in 1910-11 owing to another Steamer Company (which, however, is no longer in existence) having come into the field. The war of rates between the two Steamer Companies naturally affected the railway rates but the position did not continue for any great length of time.

The relations between the Irrawaddy Flotilla Company and the Railway have not been unfriendly, and, in 1907, an arrangement was come to between the Flotilla Company and the Railway Company under which the railway rates are higher than the steamer freights by 4 to 8 annas per 100 viss (or 11 pies to 1 anna and 10 pies per maund). This is the general basis of rates by the railway and the steamers when the two are in competition with one another, and this has gained the object which is to divide the traffic between the Railway and the Flotilla Company equally and yearly statements of traffic are exchanged to ascertain if any route has carried more than half share.

The Railway Company have another agreement with the Irrawaddy Flotilla Company regarding through booking of traffic between Katha and Bhamo. The terms of the agreement, relating to rates, are as follows :—

" Each party shall have as its share of the through charge the local fares and rates to and from Katha. The fares and rates shall not be enhanced by either party without the consent of the other. The Company further undertake that the fares and rates by their steamers from Rangoon, Prome, Mandalay or Sagaing to Bhamo or intermediate stations and *vice versâ* shall not be less than the combined railway and steamer charges for similar traffic under this agreement.

" Coaching and goods traffic shall be booked through *viâ* Katha, from any station on the Railway to Bhamo or any intermediate station and *vice versâ*, and the through ticket or receipt issued in either case shall entitle the holder to equal facilities in regard to the carriage of himself or his goods over both systems as are given in the case of

passengers and goods booked locally over the same portions of the two systems.

"The company agree that in all cases and under all circumstances no preference of any kind shall be given to consignments not booked viâ the Railway at Katha, nor to consignors or consignees thereof over consignments so booked."

The main line of the Burmah runs nearly north due south, *viz.*, from Rangoon to Myitkyina, 724 miles nearly, crossing the Irrawaddy Sagaing by ferry.

Mandalay, the Chief town of Upper Burma, is situated at the end of a short branch of 3 miles from Myohaung, 386 miles from Rangoon.

In Lower Burmah there are branches from Rangoon to Prome (161 miles), from Letpadan to Henzada, Bassein and Kyangin (174½ miles), and from Pegu to Martaban, which is opposite Moulmein (121 miles). In Upper Burmah there are branches from Thazi to Myingyan (70 miles), from Ywataung to Alon (70 miles), from Naba to Katha (15 miles), from Myohaung to Lashio in the Northern Shan States (178 miles) and from Thazi to Aungban in the Southern Shan States (70 miles).

The area under cultivation of different important crops in Upper and Lower Burmah were as follows:—

—	Upper Burmah.	Lower Burmah.
Rice.	Acreage.	Acreage.
1910-11	2,145,429	7,875,128
1911-12	1,957,713	7,936,548
1912-13	2,095,713	8,196,042
Millet (Jowar).		
1908-09	1,134,558	
1910-11	433,741	
1911-12	4,484,905	
1912-13	516,023	
Oilseeds (sesamum, til or jinjili).		
1909-10	1,207,566	
1910-11	991,967	
1911-12	1,150,373	
1912-13	1,336,335	

The Upper Burmah also grows some wheat, bajra (millet) gram, maize, groundnuts and tobacco, but the acreage is small, whereas these crops in Lower Burmah are of still lesser importance having regard to the area under cultivation of each crop.

The principal items of traffic on the Burmah Railways were as follows in 1913-14 :—

		Tons.
Rice	Unhusked (Paddy)	940,222
	Husked (Rice)	218,273
	TOTAL	1,158,495
Timber		198,928
Mineral substances (mainly stones)		331,369
Fruits and vegetables		60,396
Metals (Iron articles chiefly)		52,192
Sugar (refined and unrefined)		42,616
Provisions		55,761
Grain and Pulse		38,413
Salt		29,746
Kerosine oil		25,062
Gunnies		20,332
Oil-seeds		19,379
Coal (for public)		13,473
Cotton, raw		11,978
Piece goods, yarn, and twist		17,273
Fodder (Oil-cake, bran, hay)		38,921

The "grand total" of the weight of merchandise traffic carried over the Burmah Railways was 2,387,708 tons of which "rice and paddy" contributed 1,158,495 tons or 48 per cent.

Burmah Railways carry paddy in bulk as well as in bags and the rates for paddy (rice in the husk) are cheaper than those for rice (unhusked).

The paddy rates are as follows :—(The rates are quoted per 100 viss, which equal 4 maunds 15 seers, and have been converted into maund rates for the convenience of comparison with the rates of Indian Railways.)

Rates for paddy in bags in full wagon loads :—

	Pie per md. per mile.
For the 1st 125 miles	·333
For extra distance 125 miles to 350 miles	·073
For extra distances above 350 miles	·055

The rates for paddy in bulk (loose) are also the same as those for paddy carried in bags with this difference that in the case of loose paddy the terminal is levied at the rate of 2½ annas per 100 viss (4 mds. 15 seers)

for distances up to 75 miles, whereas in the case of paddy in bags the terminal is 1¼ annas (*i.e.*, half). Therefore, for short distances the rates over Burmah Railways including terminals, are rather high, but for distances over 125 miles the rates are decidedly low.

There are of course special rates for paddy for instance from Zibyugon to Rangoon, 96 miles, which works out to ·214 pie per maund per mile. This is a much lower rate than the scale rate for this distance. There are several such rates which are rendered necessary by river competition.

The rates for "rice" are higher than those for "paddy"; the rice rates, for traffic in full wagon loads, are as shown below:—

	Pie per md. per mile.
For the first 125 miles	·333
For extra distances 126 miles to 350 miles	·166
For extra distances above 350 miles	·066

The rice rates apply to all grain and pulses and common seeds, except that "Tilseed" is carried at the rates for paddy.

Timber rates are low, and are on a sliding scale basis, as contrast to the scale rates for rice, which are on a telescopic basis.

For distances up to 600 miles the timber rates graduate between ·205 and ·102 pie per maund per mile, whereas pine, Letpan and Shawbyn timber, in small pieces, when carried in wagon loads, to Mandalay or Rangoon are charged for all distances (whether long or short) at 3 pies per ton mile or ·11 pie per maund per mile. The timber rates are therefore low.

Similarly, the "stone rates" are also very cheap. For distances under 50 miles the rate is ·11 pie per maund per mile and ·102 pie per maund per mile for all distances beyond 50 miles. They are decidedly cheaper than on Indian Railways.

Sugar, salt, kerosine oil are all charged at class rates except where there is competition by the river or road.

Sugar and salt are both imported items of traffic, whereas kerosine oil is produced in Burmah but the railway carries a small amount of the oil from the oil fields to Rangoon to the refineries.

Until 1907, the means used for transporting kerosine oil from the fields to the refineries in Rangoon consisted of river "flats" towed by the Irrawaddy Flotilla Company steamers. In 1908, the Burmah Oil Company finished the laying of a pipe line between the important Yenangyaung field and Rangoon, a distance of 275 miles. The diameter of the pipe is said to be 10 inches and the number of pump stations are two. As Yenangyat is connected with Singu and Singu with Yenangyaung the Burmah Oil Company have, therefore, a pipe connection between all their producing centres and their refinery at Rangoon.

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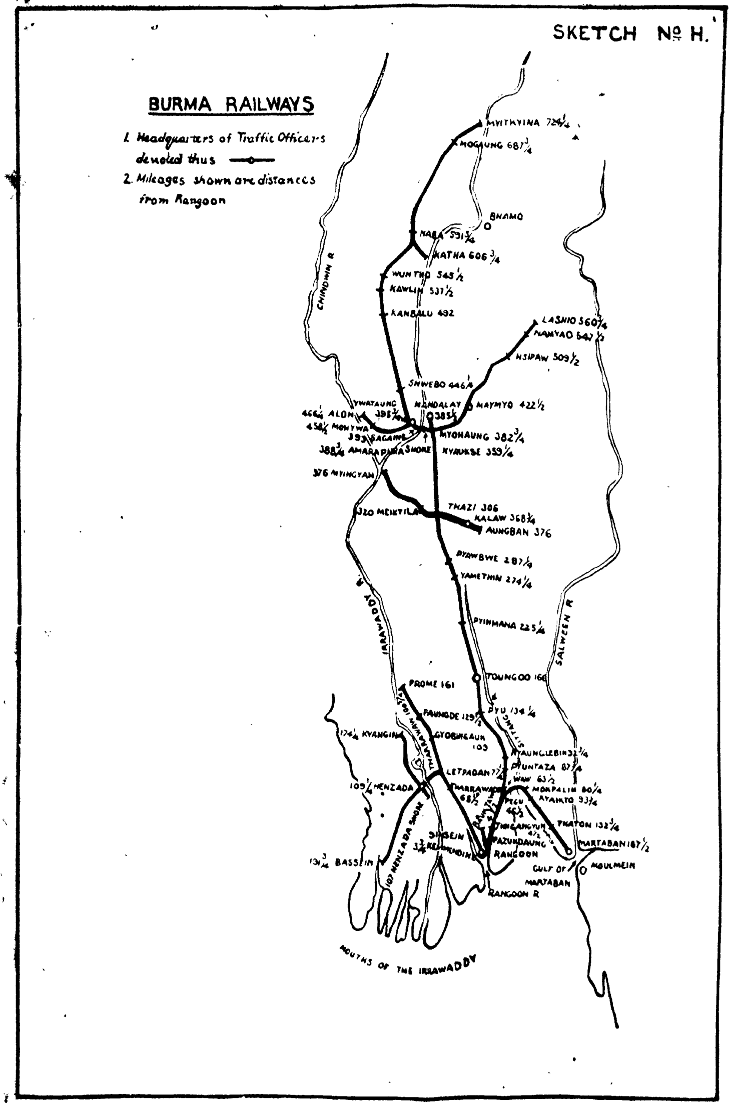

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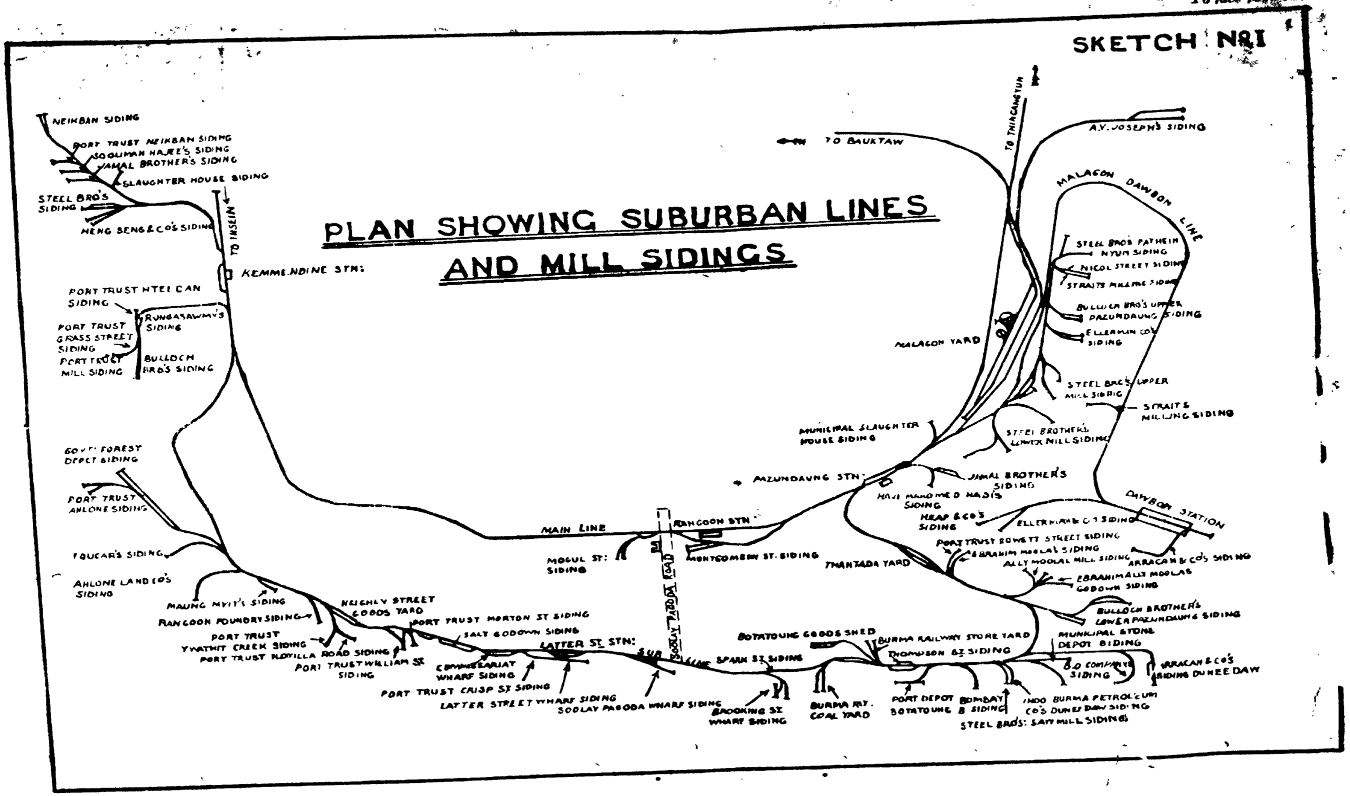

SKETCH No I

PLAN SHOWING SUBURBAN LINES AND MILL SIDINGS

APPENDIX III.

A NOTE ON SIMPLIFICATION OF THE GOODS TARIFFS.

The work of simplifying the Goods Tariffs of Indian railways was commenced in 1905 when a Special Committee known as the "Tariff Simplification Committee" was appointed by the Indian Railway Conference Association to go fully into the matter. The work was delayed from various causes but in 1909 this Committee put forward a general classification which, after receiving the approval of the Conference and the Railway Board was introduced with effect from 1st July 1910. Subsequently, however, in December of the same year the Railway Board revised their original sanction and in paragraph 11 of the revised letter, the following orders were laid down in regard the maxima and minima proposed for different classes of goods :—

> "With regard to the maximum and minimum rates that may be charged to the public for each class under the new classification, the Railway Board are unable to accept the maxima and minima proposed for each class by the Indian Railway Conference Association, as to do so would be in many cases to raise the maximum rate that could be charged to a higher level than has been fixed in the past. It was never the intention of the Railway Board that uniformity of classification should be accompanied by a general rise in the maximum rates which railways are permitted to charge.
>
> In these circumstances the question of what maximum and minimum rates should be fixed for each of the classes under the new classification must remain in abeyance until a satisfactory method can be devised for quoting a maximum and minimum rate for each class, which would not necessarily have the effect of making the maximum rate which might be charged higher than what was permissible under the old classification.
>
> In the meantime, the maximum and minimum rates that may be charged by any railway for any commodity under the new classification must not exceed the maximum and minimum that was authorised for that railway for such commodity prior to the introduction of the new classification and subject to the conditions then in force."

These orders, which were issued as the result of agitation on the part of the public against the increase in the classification, nullified to a great extent the work of the Committee, inasmuch as the large number of exceptions to the general classification which it wo[illegible]ave been necessary for each railway to notify, in order to comply with the third clause of the paragraph quoted, would have had the effect of making the classification more complex than ever. It may be remarked here that neither the trade nor the public were consulted when, in some cases, the classification was increased. Such a thing would not be possible in Great Britain. A special meeting of the Association was therefore held to consider the position and a deputation therefrom which waited on the Railway Board was informed by the President of the Railway Board that the orders issued could not be modified and that it would be necessary to append the following note to the Schedule of Maximum and Minimum class rates proposed :—

> "The maximum rate, which may be charged for any commodity under the above schedule of maximum and minimum rates for goods traffic now sanctioned, must not exceed the maximum rate permissible under the classification in force for such commodity on the 30th June 1910 on Railway."

It was therefore decided to revise the general classification already issued in order that the number of exceptions involved by the Railway Board's order might be kept to as low a figure as possible. With this end in view, the classification was re-examined by the Committee and on their recommendation a reduction was made in the class of over 325 commodities. The revised classification received the sanction of the Railway Board in their letter No. 1260 R.T. of the 28th August 1911, and was brought into force from the 1st September following, each railway issuing exception lists, where necessary, to comply with the Railway Board's orders that the classification on any railway should not exceed that in force on the 30th June 1910. Continuous efforts were made to secure greater simplification and up to May 1915 the class of a further 268 commodities had been reduced. Even then uniformity of classification had only been secured in respect of some 55 per cent. of the commodities included in the General Classification and it was felt that if real simplification was ever to be obtained some modification of the Railway Board's orders quoted in paragraph 2 above was necessary.

The matter was discussed by the Conference Association and as a result statistics of commodities in which the traffic was unimportant were got out and an application was made to the Railway Board for permission to enhance the classification of these items on those railways which were obliged to quote a higher classification than that of the General Classification of Goods. At the request of the Railway Board the Chambers of Commerce were consulted.

As a result of this reference it became possible to remove about 600 items from railways' exception lists and since then a large number of other items have been removed as being unnecessary owing to traffic th[illegible]eing negligible or in some cases non-existant. Uniformity has no[illegible]been secured in respect of over 70 per cent. of the commodities in the General Classification of Goods and of the balance, in the case of 7 per cent., only one railway quotes an exception.

Concurrently with the simplification of the classification a uniform code of rules for the acceptance, carriage and delivery of goods was drawn up and accepted by all railways. These include the following rule :—

Rule 4. Any of the conditions relating to the following in force on the forwarding railway will apply in through booking to the station of destination.

(*a*) Minimum weight. The following minimum weights only will be used in through booking between railways :—

Maunds.	Maunds.	Maunds.
54	160	300
81	200	400
100	270	450

(*b*) Packing, pressing and measurement conditions.

(*c*) Prepayment of freight or otherwise.

(*d*) Loading and unloading by sender and consignee or railway except cranage charges.

(*e*) Bulky goods.

Clause (*a*) which limits the number of different minimum weights which can be used in through booking to 9, is of particular importance as prior to the introduction of this rule in 1913 there were in force on railways a very large number of different minimum weights. One railway alone had no fewer than 70 different minima for different commodities and another had as many as 7 minima weights for one commodity. A standard form of Goods Tariff has also been approved and has been adopted by railways. This will ensure that the same chapter in whatever railways tariffs, will always deal with the same subject and will greatly facilitate reference. The forms of junction rate lists have also been standardized. These are no longer printed by the Conference as the arrangement was found to be both inconvenient and uneconomical but the standard form approved is being retained.

The attention of the Goods Classification Committee is now being directed towards a reduction in the number of schedules in force and the assimilation of weight conditions where one railway quotes a wagon rate and another a maund rate for the same commodity or where different minimum weight conditions are attached to the carriage of one commodity.

APPENDIX (IV) TO CHAPTER VIII.

ON "ECONOMICS OF TRANSPORTATION."

In Chapter VIII, to which this is an appendix, attention has been drawn to the fact that the run per wagon per day has a great deal to do with the earning capacity of a railway, but it is essential to further demonstrate that when the wagon capacity is wasted the work done per wagon per day at once diminishes to the detriment of the interests of a railway in many ways.

A larger number of wagons than is actually necessary to move the traffic economically not only increases the capital cost but the working expenses as well, as the interest on increased capital, not actually needed, the depreciation on wagons, the cost of handling and hauling more wagons all add to the working expenses.

During 10 years preceding the War there were large additions to rolling stock on Indian Railways in response to the demands continually made by the public for increased facilities of transport to enable the railways to carry the increasing traffic.

But whether the improvement in transport facilities demanded by the public required such large sums to be spent on increased rolling stock is doubtful; and it cannot be said that the Government of India did not realise this for in their Administration report on Railways for 1907 they distinctly pointed out that " before more wagons could be placed on the railways further expenditure on facilities were indispensable." The results, however, show that wagons were placed on railways before proper facilities to move them quickly were provided for.

For purposes of this discussion we may confine ourselves to the results of goods traffic working on the broad gauge sections of the following railways :—

Bengal Nagpur Railway,
Bombay, Baroda and Central India Railway,
Eastern Bengal State Railway,
East Indian Railway,
Great Indian Peninsula Railway,
Madras and Southern Mahratta Railway,
North Western Railway,
Oudh and Rohilkhand Railway.

During 9 years 1905 to 1914-15 the total value of rolling stock on the above lines increased to the extent of 39⅓ crores of rupees, as detailed in the following table :—

—	1905. Grand total value of rolling stock.	1914-15. Grand total value of rolling stock.	Excess.
	Rs.	Rs.	Rs.
Bengal Nagpur Railway . . .	4,23,52,000	9,15,81,000	4,92,29,000
Bombay, Baroda and Central India Railway.	2,38,19,000	5,36,58,000	2,98,39,000
Eastern Bengal State Railway . .	1,83,15,000	4,10,91,000	2,27,76,000
East Indian Railway . . .	11,92,40,000	20,48,37,000	8,55,97,000
Great Indian Peninsula Railway .	6,56,63,000	12,89,31,000	6,32,68,000
Madras and Southern Mahratta Railway.	2,75,75,000	3,18,28,000	42,53,000
North Western Railway . . .	7,34,02,000	19,01,45,000	11,67,43,000
Oudh and Rohilkhand Railway . .	2,32,69,000	4,51,59,000	2,18,90,000
TOTAL .			39,35,95,000

A very large portion of this expenditure was for goods rolling stock, and it will be noticed from the foregoing table that the expenditure on the North Western Railway was the highest.

The increase of traffic on the North Western Railway in merchandise was as follows from 1907 to 1914-15 :—

	Tons.
1907	5,241,859
1911	5,587,700
1914-15	5,930,712

The figures of 1911 show an increase of 6·6 per cent over those of 1907, while the traffic in 1914-15 was greater than that of 1907 by 13 per cent.

Now let us see what was the increase in the number of wagons :—

	Number of wagons in use on the North Western Railway.
In 1907	13,906
„ 1911	20,965
„ 1914-15	26,764

(It has already been shown in Chapter VIII that with the increase in the number of wagons the number of high capacity wagons also increased.)

Compared with 1907, the increase in the number of wagons in 1914-15 on the North Western Railway was 92 per cent. while the rise in the weight of traffic was but 13 per cent.; a very extraordinary disproportion between the figures of increase of traffic and those of increase in rolling stock.

Even taking the ton miles, *i.e.*, number of tons of goods carried one mile, it is observed that the ton miles in 1914-15 were greater than those of 1907 by such an insignificant figure as ·79 per cent. (not even $\frac{4}{5}$ per cent.)

The enormous increase in the number of wagons on the North Western Railway resulted in very largely diminishing the work done by wagon per day, *vide* figures below :—

	Number of miles run per wagon per day on the North Western Railway.
	Miles.
In 1907	53
„ 1911	41
„ 1914-15	29

The mileage run by a wagon in 1914-15 was less than that of 1907 by 45 per cent—a very large decrease. Even taking 1911 the decrease was 22 per cent. in comparison with 1907.

The cost of operation also went up on the North Western Railway, as the following figures of cost of haulage (including interest on capital spent on open lines at 5 per cent. per annum) will show :—

		Pies per ton mile
In 1907	1st half year	4·28
	2nd half year	3·93
„ 1914-15	1st half year	4·73
	2nd half year	5·32

The reason for taking the interest on capital spent on open line is to show the effect of the money spent on wagons, which was included in the capital cost.

It is true that as the North Western Railway deals very largely in wheat traffic, which has all to be carried in in three or four months, it is not in the same position as the coal carrying lines, where traffic is better distributed throughout the year but the fact remains that the increase in traffic was only 13 per cent., to carry which 92 per cent. wagon capacity was increased. The point is whether most of the money spent on wagons could not have been utilised in improvement of facilities for movement of trains and wagons and for improvement of terminal facilities.

A statement is annexed to this appendix showing for the year 1907, 1911 and 1914-15 the following statistics :—

(*a*) Gross receipts from goods traffic,
(*b*) Goods train miles run,
(*c*) Ton miles (*i.e.*, tons of goods carried one mile),
(*d*) Average number of tons in a train (goods),
(*e*) Average number of vehicles in a goods train,
(*f*) Average goods receipts per goods vehicle, per mile.
(*g*) Average goods receipts per train mile,
(*h*) Average sum received for carrying one ton one mile.
(*i*) Total number of goods vehicles and number of miles run per wagon per day,
(*j*) Average cost of hauling one ton one mile,
(*k*) Average cost of hauling one ton one mile, including interest on capital at 5 per cent. per annum,
(*l*) Total weight of merchandise in tons carried over each railway.

It will be observed from this statement (pages 532 to 538) that there was a falling off in the work done per wagon per day on almost every line.

A summary of the results under the following heads is given below for ready reference :—

1. Percentage of increase in wagons,
2. Percentage of decrease in the work done per wagon per day,
3. Percentage of increase in ton miles,
4. Percentage of increase in weight of goods.

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway	Oudh and Rohilkhand Railway.
Percentage of the increase in the No. of wagons in 1911 over the No. in 1907	36·3	45·1	14·3	16·7	20	Decrease *18·3	27·3	50·8	14·9
Percentage of the decrease in the work done per wagon per day in 1911 as compared with 1907	..	14·28	Increase 3·57	Increase 3·77	19·6	Increase 6·06	18	22·68	Increase 18·18
Percentage of the increase in the No. of wagons in 1914-15 over the No. in 1907	65·59	76·72	42·24	63·8	37·7	Decrease 16·35	63·03	92·46	37·7
Percentage of the decrease in the work done per wagon per day in 1914-1915 as compared with 1907	9·3	14·28	3·57	11·37	31·37	..	22	45·3	12·12
Percentage of the increase in ton miles in 1911 as compared with 1907	45·03	19·76	25·9	33·6	26·9	Decrease 1·57	22·55	Decrease 1·68	Decrease ·14
Percentage of the increase in ton miles in 1914-15 as compared with 1911	26·4	14·4	3·7	26·2	8·2	38·1	Decrease 14·19	2·5	5·2
Percentage of the increase in ton miles in 1914-15 as compared with 1907 . . .	83·3	37·02	30·6	68·6	37·4	35·9	5·16	·79	5·08
Percentage of the increase in merchandise traffic in 1914-15 as compared with 1911 .	21·8	10·2	15·7	17·3	6·4	9·18	Decrease 2·7	6·13	4·7
Percentage of the increase in merchandise traffic in 1914-15 as compared with 1907 .	53·15	25·67	29·32	35·02	27·5	37·6	14·2	13·1	5·4

* Due to Jalarpet-Mangalore Section made over to S. I. Railway.

The Bengal Nagpur Railway with an increase of 53 per cent. in the traffic and of 83 per cent. in ton miles, had additional stock to the extent of 65·59 per cent. in 7 years. The increase in its wagon capacity was more proportionate to its advance in traffic and with long distance full wagon load traffic in coal and in Manganese this Railway showed a falling off of only about 9 per cent. in the work done per wagon per diem.

On the East Indian Railway, there was an increase of 68·6 per cent. in ton miles and the number of wagons rose by 63·8 per cent. and the weight of traffic by 35 per cent. In this case with a fair proportion between the increase in ton miles and the rise in the number of wagons, the mileage run per wagon per day was less in 1914-15 by 11·32 per cent. only. Like the Bengal Nagpur Railway the East Indian Railway has the advantage of through fully loaded coal trains, which ought ordinarily to get through quicker.

On the Great Indian Peninsula Railway there were difficulties in moving the traffic, but yet as the rise in ton miles, and the addition in the number of wagons were both 37 per cent. the reduction in the mileage run per wagon per day has been 31·37 per cent. against 45 per cent. on the North Western Railway.

The broad-gauge section of the Bombay, Baroda and Central India Railway from Ahmedabad to Bombay has the advantage of getting full train load traffic from Sabarmati and the Nagda-Muttra Railway also handles a large amount of through traffic. The addition to its rolling stock was somewhat large ; it was 76 per cent. for an increase of 25 per cent. in weight of traffic and 37 per cent. in ton miles. It is admitted that the disproportion was not so great as in the case of the North Western Railway but yet the heavy increase on its rolling stock, in spite of its certain advantages just mentioned, showed a decrease in the work done per wagon per day by more than 14 per cent.

—	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohilkhand Railway.
				In Thousands of Rupees.					
GROSS RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1914-15—									
1st half	1,14,71	1,03,33	41,92	3,47,85	2.44,07	64.31	20,67	2,82,41	37,63
2nd half	1.37,24	1,09,99	61,14	3.85,73	3.00,72	68,69	21,98	2,31,78	51,55
TOTAL .	2,51,95	2,13,32	1,03,06	7,33,58	5.44,79	1,32,00	42.65	5.14,19	89,18
1907—									
1st half	1,04,95	93.94	34,92	2.90.88	2.90.31	65,92	20,21	2,49,15	42,54
2nd half	77,61	58,57	63.27	2.62,05	1,83,30	61.41	18,14	2,72,58	46,50
TOTAL .	1,82,56	1,52,51	98,19	5,52,93	4.73,91	1,27,33	38,35	5,21,73	89,04
1911—									
1st half	1,13,66	1,18.36	34.40	3,34,69	2.91.66	57,89	23,91	2,81,36	49,51
2nd half	93,00	90,76	68.32	3,00,88	2,26,00	53,99	20,69	2,65,04	39,52
TOTAL .	2,06,66	2,09,12	1,02,72	6,35,57	5,17,66	1,11,88	44,60	5,46,40	89,03

GOODS TRAIN—MILES RUN.				*In Thousands of Miles*					
1914-15—									
1st half	26,54	13,52	8,81	72,85	52,04	11,53	4,11	47,60	11,56
2nd half	28,38	14,75	9,78	77,97	51,89	11,39	3,90	45,46	12,10
TOTAL .	54,92	28,27	18,59	1,50,82	1,03,93	22,92	8,01	93,06	23,66
1907—									
1st half	20,00	9,67	7,09	55,15	51,64	13,80	4,07	49,92	9,91
2nd half	17,85	7,45	8,37	51,84	40,94	13,86	3,59	51,95	11,23
TOTAL .	37,85	17,12	15,46	1,06,79	92,58	27,66	7,66	1,01,87	21,14
1911—									
1st half	23,45	13,37	7,30	62,12	55,47	9,89	4,31	56,05	12,74
2nd half	21,40	11,42	9,89	59,25	48,04	8,53	4,09	50,72	11,48
TOTAL .	44,85	24,79	17,19	1,21,37	1,03,51	18,42	8,40	1,06,77	24,22
TONS OF GOODS CARRIED ONE MILE (TON MILES).					*In Thousands of Tons.*				
1914-15—									
1st half	670,110	324,346	149,740	2,186,938	958,988	240,633	64,070	1,242,760	147,979
2nd half	767,053	366,410	195,630	2,580,493	1,178,898	261,062	67,631	1,046,199	208,601
TOTAL .	1,417,163	690,756	345,370	4,767,431	2,137,886	501,695	131,701	2,288,959	356,580

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohilkhand Railway.
	In Thousands of Tons.								
1907—									
1st half	437,545	321,659	108,744	1,470,685	949,300	191,301	65,181	1,062,818	163,991
2nd half	335,366	182,462	155,563	1,355,881	606,735	177,728	60,059	1,208,177	175,355
TOTAL	772,911	504,121	264,307	2,826,566	1,556,035	369,029	125,240	2,270,995	339,346
1911—									
1st half	583,957	349,560	131,871	1,955,746	1,086,718	179,959	80,841	1,168,597	180,914
2nd half	537,004	254,193	201,149	1,821,792	888,642	183,259	72,640	1,064,152	157,947
TOTAL	1,120,961	603,753	333,020	3,777,538	1,975,360	363,218	153,481	2,232,749	338,861
AVERAGE NUMBER OF TONS IN A TRAIN.									
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15—									
1st half	244·93	239·98	170·01	300·21	184·29	208·71	155·80	261.10	128·03
2nd half	270·25	248·49	199·97	330·95	227·19	229·29	173·52	230·13	172·46
1907—									
1st half	218·76	332·69	153·42	266·66	183·82	138·59	121·58	212·89	165·56
2nd half	187·88	245·09	185·94	261·58	148·18	128·27	132·74	232·55	156·20

1911—									
1st half	249·02	261·51	180·62	314 82	195 91	181·92	176·40	208·50	141·95
2nd half	250·90	222·51	203 44	307·43	184 97	214·74	175·83	209·80	137·58
Average Number of vehicles in a goods train.									
1914-15—									
1st half	30·01	34·42	36 05	35 64	24 19	29·14	22·90	34·53	25·96
2nd half	32 40	35 74	38·40	37 05	26 93	31 14	23 13	29·79	26·91
1907—									
1st half	26·63	40 59	30·18	35 80	24 73	23 72	15·84	24·39	28·40
2nd half	26 15	36 60	34 82	35 94	23 49	22 38	17·10	28 22	26·53
1911—									
1st half	30 91	33 62	31 24	38 56	25 49	28 62	22 59	29 92	24·55
2nd half	33 21	36 87	35 64	37 59	24·40	28·96	23 70	30·17	22·64
Average goods receipts per goods vehicle per mile.	Pies.	Pies	Pies	Pies	Pies	Pies	Pies	Pies.	Pies.
1914-15—									
1st half	27·65	42 65	25 35	25 73	37 23	36 76	42 14	37 31	24·08
2nd half	28·65	40·07	31·25	25·64	41 33	37 20	46 83	32·86	30·41
1907—									
1st half	37·83	45 94	30·30	28·28	43 65	38 66	45·69	39·29	29·04
2nd half	31·93	41·26	41 70	27·00	36 60	38 02	45·05	35·70	29·97
1911—									
1st half	30·11	50·57	28·96	26 83	39 60	39 26	44 35	32·21	30·38
2nd half	25·12	41·37	37·23	25·94	37·01	41·95	40·58	33·25	29·19

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohilkhand Railway.
AVERAGE GOODS RECEIPTS PER TRAIN MILE.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.
1914-15—									
1st half	4·32	7·64	4·76	4·78	4·69	5·58	5 03	5·93	3·26
2nd half	4·84	7·46	6·25	4·95	5·80	6·03	5·64	5·10	4·26
1907—									
1st half	5 25	9 71	4 93	5 27	5 62	4·78	4·97	4·99	4·29
2nd half	4·35	7·86	7·56	5 06	4·48	4·43	5·06	5·25	4·14
1911—									
1st half	4 85	8 85	4 71	5 39	5 26	5·85	5·54	5·02	3·88
2nd half	4 34	7 94	6 91	5·08	4·70	6 33	5·06	5·23	3·44
AVERAGE SUM RECEIVED FOR CARRYING ONE TON ONE MILE.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—									
1st half	3·39	6·12	5·38	3·05	4·89	5·13	6·19	4·36	4·88
2nd half	3 44	5·76	6 00	2·87	4 90	5·05	6·24	4·25	4·75
1907—									
1st half	4·61	5·61	6·16	3·80	5·87	6·62	5·95	4·50	4·98
2nd half	4·44	6·16	7·81	3·71	5·80	6·63	5·80	4·33	5·09

1911—									
1st half	3·74	6·50	5·01	3·29	5·15	6·18	5·68	4·62	5·25
2nd half	3·32	6·86	6·52	3·17	4·88	5·66	5·47	4·78	4·80
1914-15—									
AVERAGE NUMBER OF GOODS VEHICLES .	14,421	9,366	6,627	33,975	17,770	4,516	1,839	26,764	7,770
NUMBER OF MILES RUN PER WAGON PER DAY	39	30	27	47	35	33	39	29	29
1907—									
AVERAGE NUMBER OF GOODS VEHICLES .	8,709	5,300	4,659	20,742	12,905	5,399	1,128	13,906	5,644
NUMBER OF MILES RUN PER WAGON PER DAY	43	35	28	53	51	33	50	53	33
1911—									
AVERAGE NUMBER OF GOODS VEHICLES .	11,873	7,693	5,328	24,212	15,487	4,409	1,436	20,965	6,488
NUMBER OF MILES RUN PER WAGON PER DAY	43	30	29	55	41	35	41	41	39
AVERAGE COST OF HAULING ONE TON ONE MILE.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—									
1st half	1·88	2·81	4·17	1·40	3·65	2·90	2·90	2·60	3·10
2nd half	1·56	2·85	3·28	1·09	2·23	2·51	2·93	2·90	2·59
1907—									
1st half	2·04	2·00	4·61	1·51	2·50	4·49	1·97	2·34	3·05
2nd half	2·48	3·00	3·88	1·58	3·36	5·00	1·85	2·15	3·64
1911—									
1st half	1·86	2·68	3·76	1·34	2·58	3·29	2·98	2·81	2·53
2nd half	1·75	3·10	3·41	1·35	2·71	3·21	2·55	2·87	2·72

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohil-khand Railway.
AVERAGE COST OF HAULING ONE TON ONE MILE, INCLUDING INTEREST ON CAPITAL, SPENT ON THE OPEN LINES, AT 5 PER CENT. PER ANNUM.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—									
1st half	3·63	4·95	7·24	2·55	5·63	5·06	5·64	4·73	6·46
2nd half	3·17	4·89	6·57	2·12	3·93	4·58	5·53	5·32	5·23
1907—									
1st half	4·17	3·62	7·51	2·87	4·23	8·04	4·50	4·28	5·63
2nd half	5·29	5·81	6·15	3·05	5·77	8·78	4·57	3·93	6·29
1911—									
1st half	3·70	4·46	6·30	2·49	4·23	6·15	5·07	4·95	5·30
2nd half	3·70	5·29	5·72	2·56	4·60	5·93	4·82	5·12	5·67
TOTAL WEIGHT OF MERCHANDISE IN TONS, CARRIED DURING—									
1914-15	6,261,879	2,858,238	4,233,445	14,987,357	5,672,800	3,342,998	893,983	5,930,712	1,926,294
1907	4,088,695	2,274,346	3,273,471	11,100,174	4,446,611	2,428,768	782,584	5,241,859	1,827,567
1911	5,138,569	2,591,854	3,658,908	12,771,980	5,328,142	3,061,730	918,344	5,587,760	1,838,914

Further examination of the position in order to see whether the railways are doing their best in utilising the capacity of the railways is essential, and it will not be *mere* academic discussion if the statistical results are scrutinized, for it may result in attracting attention towards improvements.

In the first place, although the carrying capacity of a line may be constant in theory it is not so in practice, because the traffic fluctuates. This is very true in ordinary times, when the traffic does fluctuate from month to month, sometimes week to week. During existing times, however, the fluctuations are more due to want of wagons at places of loading and for delays at junctions, in big yards, etc. Otherwise, under existing conditions, with constant and heavy traffic the maximum capacity of the line can be very well kept occupied, if there is a combination and an organization, which would look at things from all points of view and have such information as would enable the organizers and administrators to work back and be ready for things that now come suddenly and have to be faced without there being any preparation for it. It does not require any high degree of technical knowledge of transportation to know that if any section of the line is to be occupied in carrying maximum capacity of traffic it is essential that trains must have full loads. The maximum weight of trains on any line depends on several factors, such as the hauling power of the engines, speed required, grades, the lengths of available loops and sidings. Railways have fixed loads on certain sections of their lines and in these days 50 loaded wagons to a broad gauge train does not seem to be an unduly high figure.

For the year 1915-16, the following were the average number of loaded vehicles to a freight train on the following important broad gauge trunk lines :—

	1915-16	
	1st half.	2nd half
Bengal Nagpur Railway	32·15	33·30
Bombay, Baroda and Central India Railway	36·24	37·23
East Indian Railway	35·64	37·39
Great Indian Peninsula Railway . .	27·58	27·84
North Western Railway	34·49	32·81

One can understand the reasons for limited loads on the Great Indian Peninsula Railway because on greater portion of this line (Great Indian Peninsula proper) there are grades which operate against heavy loads, but the point in whether the figure of 27 is a fair average.

The best results were those of the East Indian Railway, Bombay. Baroda and Central India Railway, but even on these lines there was an average deficiency of 13 vehicles to a train.

What this means can be illustrated by an example. Say between A and B 1,850 loaded wagons have to be moved. This can be done by

running 37 trains of 50 loaded each, but if each train contains 37 loaded wagons the section A and B is burdened with 13 more trains and thus its actual capacity is wasted to this extent and this affects a very large area and delays are apt to be cumulative.

The average carrying capacity of wagons has been given as follows :—

	Covered wagons. Tons.	Open wagons. Tons.
Bengal Nagpur Railway	16·23	17·77
Bombay, Baroda and Central India Railway	18·86	19·17
East Indian Railway	18·16	16·74
Great Indian Peninsula Railway . .	18·32	16·43
North Western Railway	21·32	17·63

The average load secured per *loaded vehicle* (without taking the empty vehicles into account) was as follows in 1915-16 :—

	1st half. Tons	2nd half. Tons.
Bengal Nagpur Railway	12·42	12·77
Bombay, Baroda and Central India Railway	11·23	10·94
Great Indian Peninsula Railway . .	10·76	11·92
North Western Railway	10·76	10·33
East Indian Railway	13·93	14·01

These figures show a further waste of capacity, which taken in conjunction with the wastage of train capacity represent a serious loss, *especially when it is remembered that the figures are for loaded vehicles, without taking into account empty wagons.*

The North Western Railway have provided for wagons of highest capacity, *but its loads were not big.* High capacity wagon means bigger tare loads and with no advantage in the actual load this must mean great waste of capacity both in number of trains and wagons used.

On the North Western Railway, for instance, with a mean capacity of 19·475 tons the average mean load is 10·545 tons, which means that to carry 1,000 tons of traffic about 95 vehicles are used instead of 53 only, or *in other words, for every 1,000 tons 42 vehicles are being unnecessarily used.* **Wagons of seemingly unnecessary high capacity involving wastage of space on trains, meaning more trains go to add to congestion at junction, terminal, and marshalling stations and mean additional staff, engines, etc.**

From Railway Board's Administration Report for 1916-17 it is noticed that the results in regard to the number of miles run per wagon per day were as follows :—

	Miles per day 1916-17.	Miles per day 1907.
Bengal Nagpur Railway	40	43
Bombay, Baroda and Central India Railway	39	35
East Indian Railway	59	53
Great Indian Peninsula Railway . .	47	51
North Western Railway	34	53

It will be seen that while the East Indian Railway showed a better result in the work done per wagon per day the other railways excepting the Bombay, Baroda and Central India Railway did not show any improvement as compared with results ten years ago.

The results in 1915-16 were as follows :—

	Wagon miles per day
Bengal Nagpur Railway	42
Bombay, Baroda and Central India Railway	35
East Indian Railway	52
Great Indian Peninsula Railway	37
North Western Railway	30

which show that while there is no improvement in 1916-17 except for the East Indian Railway and the Bombay, Baroda and Central India Railway compared with 1907, though there was an improvement on the East Indian, Great Indian Peninsula, Bombay, Baroda and Central India and North Western Railways in 1916-17 over the figures of 1915-16.

Compared with 1907, the work done per wagon per day on the North Western Railway was less by 19 miles in 1916-17.

In regard to the comparisons of the average capacity of wagons with the average load secured per loaded vehicle (without taking the empty vehicles into account) there yet seems wastage.

(*a*) The average capacity of wagons in 1916-17 were as follows :—

	Covered wagons. Tons.	Open wagons. Tons.
Bengal Nagpur Railway	16·26	18·32
Bombay, Baroda and Central India Railway	18·98	19·27
East Indian Railway	18·40	16·77
Great Indian Peninsula Railway . .	18·34	16·56
North Western Railway	21·38	17·63

(*b*) While the load—average—secured per loaded vehicle—without taking the empty vehicle into account—was as follows :—

	1st half. Tons.	2nd half. Tons.
Bengal Nagpur Railway	14·59	14·22
Bombay, Baroda and Central India Railway	12·24	12·07
Great Indian Peninsula Railway . .	10·91	12·44
North Western Railway	11·23	13·21
East Indian Railway	13·50	13·28

Owing to the enormous increase in coal traffic there is naturally an improvement in the wagon load over the results of 1915-16 *except in the case of the East Indian Railway where the load for wagon has gone down.* The wagon loads in 1915-16 were as follows :—

	1st half Tons.	2nd half. Tons.
Bengal Nagpur Railway	12·42	12·77
Bombay, Baroda and Central India Railway	11·23	10·94
Great Indian Peninsula Railway . .	10·76	11·92
North Western Railway	10·76	10·33
East Indian Railway	13·93	14·01

Taking the North Western Railway the wastage is as follows :—

	Tons.
Mean capacity	19·55
Mean load	12·22
	7·33

or 7⅓ tons per every loaded wagon, which practically means that almost every third wagon was unnecessarily used.

The figures of number of loaded vehicles to a freight train were :—

—	1914-15		1915-16		1916-17	
	1st half	2nd half	1st half	2nd half	1st half	2nd half
Bengal Nagpur Railway . .	30·01	32·40	32·15	33·30	34·02	32·91
Bombay, Baroda and Central India Railway.	34·42	35·74	36·24	37·23	35·82	36·30
East Indian Railway . .	35·64	37·05	35·64	37·39	39·23	41·02
Great Indian Peninsula Railway	24·19	26·93	27·58	27·84	28·94	28·58
North Western Railway . .	34·53	29·79	34·49	32·81	34·89	35·15

It will be noticed that there has been some improvement in the train load except that in the case of the Bengal Nagpur and Bombay, Baroda and Central India Railways the figures of the second half of 1915-16 were better than those of 1916-17.

But yet taking the North Western Railway, if the load of a loaded train is taken at 50, the average shows a deficit of 15 wagons per train, which is a large figure and represents a deficit in the load of each train by 28 per cent.

The Bengal Nagpur Railway had to carry in the first half of 1916-17 74 per cent. and in the 2nd half 49 per cent. greater goods ton miles as compared with that carried during the corresponding periods of 1913-14, the official year just before the War, and the increases in train miles to carry this additional tonnage were 24 per cent. and 18 per cent. respectively.

The Bombay, Baroda and Central India Railway had an increase of 31 per cent. in ton miles during the 1st half and 19 per cent. in the 2nd half with an increase of 25 per cent. and 15 per cent. in train miles respectively.

On the Great Indian Peninsula Railway the ton miles rose by 36 and 20 per cent. and the train miles by 25 and 15 per cent. respectively.

The increase in ton mileage on the East Indian Railway was 36 per cent. and that in train mileage about 25 per cent.

The North Western Railway during the 1st half of 1916-17 actually hauled less ton miles than in the 1st half of 1913-14, as the decrease was 4 per cent. with an exactly corresponding decrease in the train mileage, but during the 2nd half the ton miles rose by 13 per cent. to meet which there was no extra increase of train miles. On the other hand the train miles went down by 5 per cent.

The vehicle mileage loaded and empty compared as follows in 1916-17 with that of 1913-14 :—

—	VEHICLE MILEAGE, 1913-14 (in thousands).				VEHICLE MILEAGE, 1916-17 (in thousands).				PERCENTAGE OF INCREASE IN			
	1st half.		2nd half.		1st half.		2nd half.		1st half.		2nd half.	
	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.
									Per cent	Per cent.	Per cent.	Per cent.
Bengal Nagpur Railway	51,530	26,025	55,795	25,307	72,947	35,335	72,769	31,730	42	36	30	25
Bombay, Baroda and Central India Railway.	34,787	12,524	39,754	12,811	38,388	22,443	41,433	21,607	10	79	4	69
Great Indian Peninsula Railway	101,977	40,577	125,192	25,475	143,212	61,588	136,082	53,927	40	52	9	112
East Indian Railway	164,526	87,653	165,744	94,689	215,335	130,110	218,449	143,827	31	48	32	52
North Western Railway	124,741	51,695	111,424	30,490	120,286	54,965	106,350	53,414	Decrease 4	6	Decrease 5	75

It will be noticed that while on the Bengal Nagpur Railway and East Indian Railway, the percentage of increased loaded vehicle mileage was not exceeded by the rise in the percentage of empty vehicle mileage, the western lines, *viz.*, the Bombay, Baroda and Central India, the Great Indian Peninsula and the North Western Railways showed very large disproportion between the rise in loaded vehicle mileage and the rise in the percentage of empty vehicle mileage—the increase in empty running was considerably greater, so much so, that on the Great Indian Peninsula Railway the empty running rose by 112 per cent. The percentages of empty vehicle mileage to loaded vehicle mileage on the Great Indian Peninsula, North-Western and Bombay, Baroda and Central India Railways were 41, 48 and 55 per cent. respectively. Although the percentage of empties was not very large compared with previous years, the numbers of both loaded and empty trains were greater owing as previously stated to very heavy exports due to the carriage of coal to the western ports by rail from Bengal, instead of by the sea and to the Calcutta port being practically shut out for export traffic.

A statement is appended below showing the average speed of goods trains during last 4 official years :—

Average speeds of goods trains.

—	MILES PER HOUR							
	1913-14		1914-15		1915-16		1916-17.	
	1st half	2nd half.	1st half	2nd half	1st half	2nd half	1st half	2nd half.
Bengal Nagpur Railway .	10·00	10·00	10·00	10·00	10·00	10·00	10·00	10·00
Bombay, Baroda and Central India Railway	8·53	7·90	7·95	7·94	7·95	7·95	8·04	8·06
Great Indian Peninsula Railway.	10·70	10·04	12·45	10·08	10·34	10·18	10·24	10·12
East Indian Railway .	15·20	15·10	15·00	16·30	16·20	16·38	16·30	16·30
North Western Railway .	10·28	10·36	10·44	10·29	10·37	10·13	9·92	9·85

The Bengal Nagpur Railway shows an average speed of 10 miles per hour. It has remained stationary at this figure. The booked speeds of goods trains on the Bengal Nagpur Railway vary from 12 to 18 miles per hour, except that on some sections in one direction the speed is 14 to 20 miles per hour. Out of 1,896 miles of its broad gauge mileage, 625 miles are on a grade of 1 in 101 to 1 in 200, 151 miles in grades of 1 in 201 to 1 in 300, and 119 miles on the grades of 1 in 181 to 1 in 100.

The Great Indian Peninsula Railway average speed is recorded at 10·24 miles per hour. During the last four years, the highest figure attained by this Railway was 12·45 miles per hour during the 1st half of 1914-15. The Great Indian Peninsula loads per train are limited. The average train load of freight trains is about 29 loaded vehicles against 39 to 41 of the East Indian Railway and 34 to 36 of the Bengal Nagpur, Bombay, Baroda and Central India, and North Western Railways. The Great Indian Peninsula goods trains on its Jubbulpore branch, Nagpur branch and between Bina and Delhi, including branches on this length, have a booked speed of 18 to 19 miles per hour, except on certain lengths where it goes down to 12 and 13. It has to carry a limited load owing to short gradients, specially as the bulk of the traffic has to ascend and descend the western ghats, both from the north east and south east to Bombay. Out of a total mileage of 3,173 miles, more than one-fourth is on a grade of 1 in 101 to 1 in 200 and 279 miles in grades of 1 in 201 and 1 in 300.

The North Western Railway has gone down in its average speed to 9·92 miles from 10·37 miles per hour. Its booked speed of goods trains is 15 miles per hour except on the ghats.

The Bombay, Baroda and Central India Railway goods trains have the slowest speed not exceeding an average of 8 miles an hour.

The East Indian Railway, of course, shows the best results. Its average is more than 50 per cent. greater than that of the other lines and the booked speed is about 20 miles an hour

The results of work done per wagon per day have already been commented upon and it will also be interesting to see the work done by engines. The results are worst on the North Western Railway. The East Indian Railway with 870 goods engines, used exclusively on goods working, showed in 1916-17 a result of 76 miles per engine per day which was an improvement on the figures of 1915-16 and of 1913-14. But the North Western Railway with 939 engines, used exclusively for goods traffic, showed a return of 21 miles per day. It did not show far better results before. Its goods engines did not do more than 24 miles per day before the War (1913-14) and 21 miles in 1915-16. Yet it may be pointed out that when the North Western Railway had 863 engines in 1913-14 and worked a heavier ton miles in the 1st half of that year as compared with 1916-17 and only 13 per cent. less ton miles in the 2nd half it showed a better result when it had a lesser number of engines. The Bengal Nagpur Railway and the Bombay, Baroda and Central India Railway do not show engines employed on goods working exclusively. The Bengal Nagpur Railway results in 1913-14 with 317 engines were 69 miles per engine per day against 62 miles per engine per day with 416 engines in 1916-17. The Bombay, Baroda and Central India only added 10 engines to its number since 1913-14, on mixed working and showed a better result by 5 miles per day. Both on the East Indian and North Western Railways, in engines used on combined service, there was an improvement but the numbers of such engines were very small, namely 80 on the North Western Railway and 167 on the East Indian Railway.

High cost of operation on metre and narrow gauge lines.

Then there is another important factor in connection with "Economics of Transportation," *viz.*, the cost of haulage by narrow gauge lines. The mileage of such lines is increasing and the tendency is to encourage narrow gauge lines into big systems, and, therefore, the cost of carriage, apart from the question of the transhipment due to break of gauge, by such lines has to be carefully considered. For it seems clear that any large systems of narrow gauge lines will not be able to afford low cost of carriage to the public in spite of low cost of construction.

In a given volume of traffic the narrower the gauge the greater is the working expenses.

The reason for the narrow gauge cost for hauling a given volume of traffic being greater than on a broad gauge is that the hauling capacity of the engines and trucks of the narrow gauge is much less, and, therefore, more trains have to be run on this gauge for carrying a given amount of traffic than what the broad gauge would require for carrying the same amount. Consequently, the cost of haulage per ton mile on 2½′ gauge becomes greater and the percentage of working expenses to gross earnings is more.

It will be seen from the following comparative figures that the cost of haulage of one ton one mile on a narrow gauge is considerably higher than that of a broad gauge, and that the locomotive expenses of the narrow gauge come very near to that of broad gauge, and, therefore, it may not be out of place to particularly point out here that while the load a narrow gauge engine is capable of hauling is even less than half the load a broad gauge engine hauls, the locomotive expenses of both are nearly equal, thus proving that there is a heavy loss in coal, oil, etc., for every mile of engine run on a narrow gauge system.

Analysis of the working during each half of the financial year 1914-15.

	1914-15.	Bengal Nagpur Railway 5′ 6″ gauge	Bengal Nagpur Railway 2′ 6″ gauge.
Average cost of hauling one ton one mile, pies	1st half year	1·88	4·57
	2nd half year	1·56	5·13
Average cost of hauling one ton one mile, including interest on Capital expended on open line at 5 per cent.,—pies	1st half year	3·63	9·53
	2nd half year	3·17	11·12
Total Locomotive expenses per engine mile,—annas.	1st half year	8·77	7·71
	2nd half year	8·39	7·66

In connection with the question of construction of railways of any length in an area where the broad gauge would not pay on account of original cost of construction being high, even taking into account the fact that the main line would supply the rolling stock and in regard to branches to the metre gauge, it would, I consider, be preferable to build metre gauge lines and it may not be out of place to quote the following extracts from a note I wrote in July, 1915:—

"Take the case of Jamnagar Railway. It is a small line of 54 miles length on metre gauge. This metre gauge line of short length of 54 miles (about the length of Messrs. Martin and Company's Baraset-Basirhat line of 2′ 6″ gauge) pays 6·62 per cent. on a capital outlay of Rs. 23,53,951 (or Rs. 43,500 per mile) and has a week mile earning of Rs. 103 and working expenses at 46 per cent."

"The Baraset-Basirhat Railway of Messrs. Martin & Co. (with a mileage of 51 miles, practically the same as Jamnagar Railway) with a week mile earning of Rs. 124 does not pay more than 5·2 per cent. on a capital outlay of Rs. 23,08,116 (or Rs. 45,000 per mile)."

"If the Barsi Light Railway had been a metre gauge line the earnings would have been much better and the working expenses lower. This is so very apparent. During recent years the week mile earnings have gone up from Rs. 174, which was the maximum before the extension, to Rs. 219, but during 1913 and 1914 it has been somewhat stationary at Rs. 206 and Rs. 219. This shows that had the line been metre gauge the increase would have been enormous."

"This above remark of mine is borne out by the fact that on the Morvi Railway so long as the railway was narrow gauge (2′ 6″) the earnings were about Rs. 75 per week per mile at the utmost and the working expenses 46 per cent."

"In 1905 the Morvi Railway was converted into metre gauge and for same mileage the week earnings steadily rose to Rs. 161 per week mile (more than double) and the working expenses came down from 46 per cent. to 33 per cent. and 35 per cent. and the percentage of net profit went up from 5·55 per cent. to 9·65 per cent. *in spite of the fact that the capital outlay on narrow gauge was 34 lakhs against 52 lakhs for metre gauge now, and on this increased capital the railway pays 9 per cent. No better case could be cited.*"

"Take again, the Udaipur-Chittor line and compare with the Arrah-Sasaram of Martin's. The Arrah-Sasaram Railway has a length of 65·26 miles and the Udaipur-Chittor of 67·30. The Arrah-Sasaram is 2′ 6″ and the Udaipur Chittor is metre gauge. The capital cost of Arrah-Sasaram including rolling stock is Rs. 22,31,435 and of the Udaipur-

Chittor Rs. 22,34,126 (this also includes rolling stock). Here the cost of narrow gauge including rolling stock per mile is greater than the cost of metre gauge including rolling stock per mile. The working expenses of the Arrah-Sasaram (2′ 6″ gauge) are 61 per cent. and that of the Udaipur-Chittor 48 per cent.''

Now as to metre gauge. The following are the figures of the cost of haulage on metre gauge and broad gauge sections of the Bombay, Baroda and Central India Railway.

During first half of 1916-17.

Average cost of haulage on broad gauge section .	2·4 pies per ton mile.
Average cost of haulage on metre gauge section .	2·76 pies per ton mile.

This means that for every ton of goods carried on the metre gauge there is an additional expenditure of ·72 pie for every mile as compared with the broad gauge.

This extra expenditure is obvious when we compare the "locomotive running expenses" on both gauges

During first half of 1916-17

Broad gauge	13·72 annas per engine mile.
Matre gauge	10·37 " " " "

Taking a given amount of traffic of 2,000 tons if would take 7 broad gauge trains (at an average freight load per train of 276·74 tons), and about 15 metre gauge trains (at an average freight load per train of 130 tons. These are also figures for the 1st half of 1916-17.

To carry 2,000 tons for 200 miles the difference in "locomotive running expenses" would be:—

	annas	trains	miles	Rs.
Broad gauge	13·72 ×	7 ×	200 =	1,200
Metre gauge	10·37 ×	15 ×	200 =	1,944

So that for the carriage of every 2,000 tons for every 200 miles there is an extra expenditure of Rs. 744 by metre gauge as compared with the broad gauge.

APPENDIX V.

Passenger Traffic, (average rates, cost and profit of several Railways).

		East Indian.			Great Indian Peninsula.			Bombay, Baroda and Central India.		
—		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	3rd class	3	1·72	1·28	4	3·416	0·584	3 (ordinary) 4 (by mail)	..	..
	All classes together	3·04	1·72	1·32	3·52	3·416	0·104	3·24	2·48	0·76
1873	3rd class	3	1·87	1·13	4	2·88	1·12	3 (ordinary) 4 (by mail)	.	..
	All classes together	3·08	1·8674	1·2126	3·2536	2·88	0·3736	3·04	2·16	0·88
1875	3rd class	3	1·672	1·338	3·4	2·384	1·616	3 (ordinary) 4 (by mail)		..
	All classes together	3·108	1·672	1·436	3·312	2·384	0·928	3·024	2·04	0·984
1877	3rd class	3	1·00	2·00	4	1·52	2·48	3 (ordinary) 4 (by mail)	..	..
	All classes together	3·016	1·00	2·016	2·992	1·52	1·472	2·944	1·4	1·544
1879	3rd class	3	1·08	1·92	4	2·16	1·84	3 (ordinary) 4 (by mail)	.	..
	All classes together	2·984	1·08	1·904	3	2·16	0·084	2·6	1·488	1·112

1882	3rd class	2·79	0·73	2·06	2·48	1·01	1·47	2·45	0·96	1·49
	All classes together	3·01	0·73	2·28	3·03	1·01	2·02	2·72	0·96	1·76
1884	3rd class	2·5	0·87	1·63	2·48	1·06	1·42	2·44	1·1	1·31
	All classes together	2·7	0·87	1·83	2·81	1·06	1·75	2·70	1·1	1·60
1886	3rd class	2·51	0·82	1·69	2·44	1·25	1·19	2·35	0·95	1·40
	All classes together	2·70	0·82	1·88	2·72	1·25	1·47	2·63	0·95	1·68
1888	3rd class	2·50	0·76	1·74	2·42	1·43	0·99	2·32	1·18	1·14
	All classes together	2·70	0·76	1·94	2·71	1·43	1·28	2·61	1·18	1·43
1892	3rd class	2·51	0·64	1·87	2·41	1·58	0·83	2·34	1·17	1·17
	All classes together	2·73	0·64	2·09	2·70	1·58	1·12	2·62	1·17	1·45
1895	3rd class	2·51	0·69	1·82	2·31	1·57	0·74	2·36	1·06	1·30
	All classes together	2·73	0·69	2·04	2·71	1·87	0·84	2·63	1·06	1·57
1898	3rd class	2·51	0·73	1·78	1·90	2·35	—0·45	2·23	1·40	0·83
	All classes together	2·74	0·73	2·01	2·55	2·35	0·20	2·60	1·40	1·20
1901	3rd class	2·46	0·76	1·70	2·05	1·48	0·57	2·28	1·30	0·98
	All classes together	2·65	0·76	1·89	2·38	1·48	0·90	2·58	1·30	1·28
1904	3rd class	2·44	0·76	1·68	2·15	1·49	0·66	2·28	1·41	0·87
	All classes together	2·66	0·76	1·90	2·49	1·49	1·00	2·54	1·41	1·13
1907	3rd class	2·23	0·87	1·36	2·15	1·60	0·55	2·14	1·13	1·01
	All classes together	2·42	0·87	1·55	2·46	1·60	0·86	2·37	1·13	1·24
1910	3rd class	2·21	0·87	1·34	2·27	1·82	0·45	2·06	1·36	0·70
	All classes together	2·42	0·87	1·55	2·60	1·82	0·78	2·23	1·36	0·87
1913	3rd class	2·21	0·76	1·45	2·36	1·89	0·47	2·09	1·39	0·70
	All classes together	2·40	0·76	1·64	2·61	1·89	0·72	2·31	1·39	0·92
1915	3rd class	2·22	0·75	1·47	2·32	1·85	0·47	2·09	1·24	0·85
	All classes together	2·41	0·75	1·66	2·55	1·85	0·70	2·30	1·24	1·06

Passenger Traffic—contd.

		Madras.			Scinde, Punjab and Delhi.			Eastern Bengal.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	3rd class	3	1·4	1·6	3	..	.	4½	.	..
	All classes together	3·024	1·408	1·616				.	...	..
1873	3rd class	By day 3 By night 4	.		Scinde section 3½ Punjab section 3		..	4½	..	..
	All classes together	2·76	1·792	968			.	.	..	..
1875	3rd class	3½	2·04	1·46	3	1·872	1·128	4½	1·936	2·564
	All classes together	2·992	2·04	952	2·808	1·872	936	3·024	1·936	1·188
1877	3rd class	Single 3·5 Return 4·375			2·25, 2·5 and 3			4½	1·44	3·06
	All classes together	3·152	1·576	1·576	2·52	1·544	976	2·608	1·44	1·168
1879	3rd class	Single 3 Return 6			2·25, 2·5 and 3	..	..	4½	·728	2·772
	All classes together	2·5792	2	5792	2·4	1·44	96	3·048	·728	1·32
1882	3rd class	1·99	1·28	71	2·42	1·42	1·00	2·96	1·38	1·58
	All classes together	2·29	1·28	1·01	2·56	1·42	1·14	3·25	1·38	1·87

1884	3rd class	1·87	·92	·95	2·48	1·34	1·09	2·73	1·69	1·04
	All classes together	2·11	·92	1·19	2·59	1·34	1·25	2·86	1·69	1·17
						(North-	Western)			
1886	3rd class	1·75	0·97	0·78	2·39	1·13	1·26	2·46	1·38	1·08
	All classes together	1·97	0·97	1·00	2·52	1·13	1·39	2·70	1·38	1·32
1888	3rd class	1·70	1·02	0·68	2·47	1·45	1·02	2·53	1·24	1·29
	All classes together	1·89	1·02	0·87	2·62	1·45	1·17	2·76	1·24	1·52
1892	3rd class	1·63	1·01	0·60	2·42	1·33	1·09	2·58	1·19	1·39
	All classes together	1·78	1·03	0·75	2·57	1·33	1·24	2·78	1·19	1·59
1895	3rd class	2·11	0·93	1·18	2·25	1·04	1·21	2·57	1·04	1·53
	All classes together	2·28	[illegible]	[illegible]	2·43	1·04	1·39	2·77	1·04	1·73
1898	3rd class	2·11	1·07	1·04	2·25	1·03	1·22	2·48	1·16	1·32
	All classes together	2·21	1·07	1·24	2·41	1·03	1·40	2·70	1·16	1·54
1901	3rd class	2·2[illegible]	0·95	1·28	2·27	1·17	1·10	2·38	1·35	1·03
	All classes together	2·42	0·95	1·47	2·42	1·17	1·25	2·60	1·35	1·25
1904	3rd class	2·25	1·30	0·95	2·27	1·14	1·13	2·48	1·49	0·09
	All classes together	2·44	1·30	1·14	2·41	1·14	1·27	2·71	1·49	1·22
1907	3rd class	2·25	1·57	0·68	2·26	1·28	0·98	2·46	1·74	0·72
	All classes together	2·44	1·77	0·87	2·41	1·28	1·13	2·64	1·74	0·90
1910	3rd class	2·30	1·16	0·84	2·26	1·56	0·70	2·41	1·44	0·97
	All classes together	2·38	1·16	1·00	2·41	1·56	0·87	2·58	1·44	1·14
1913	3rd class	2·18	1·25	0·93	2·26	1·45	0·81	2·50	1·39	1·11
	All classes together	2·37	1·25	1·11	2·42	1·45	0·97	2·65	1·39	1·26
1915	3rd class	2·18	1·16	1·02	2·26	1·31	0·95	2·50	1·49	1·01
	All classes together	2·33	1·16	1·17	2·41	1·31	1·10	2·65	1·49	1·16

Passenger Traffic—contd.

		OUDH AND ROHILKHAND.			SOUTH INDIAN.			BENGAL AND NORTH-WESTERN (INCLUDING TIRHOOT).		
		Average sum received for carrying a unit one mile	Average cost of hauling a coaching unit one mile	Average profit in hauling a coaching unit one mile	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile	Average sum received for carrying a unit one mile	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	3rd class	2			3	..				..
	All classes together									
1873	3rd class	2			2			..	..	..
	All classes together									..
1875	3rd class	2 3 reserved Res. comp 16 and 24			2		..			..
	All classes together					..		..	..	..
1876	3rd class	2 3 reserved Res. comp 16 and 24			2					..
	All classes together	1·928	·904	1·0376						..
1877	3rd class	2 3 reserved Res. comp 16 and 24			2				..	..
	All classes together	1 936	736	1 2	narrow gauge 1 85	685	1·192	..	..	..
1879	3rd class	2·51			2 5		..	..		..
	All classes together	..	..		..		..		..	

1882	3rd class	2·51	1·07	1·44	2·50	0·95	1·55	Tirhoot 2·50	0·97	1·53
	All classes together	2·58	1·07	1·51	2·60	0·95	1·65	2·71	0·97	1·74
1884	3rd class	2·5	1·1	1·4	2·00	0·96	1·04	2·35	1·6	·75
	All classes together	2·59	1·1	1·49	2·06	0·96	1·10	2·54	1·6	·94
1886	3rd class	2·5	1·13	1·37	2·00	1·07	0·93	2·02	1·03	0·99
	All classes together	2·61	1·13	1·48	2·07	1·07	1·00	2·11	1·03	1·08
1888	3rd class	2·50	1·18	1·32	2·00	1·04	0·96	2·00	0·95	1·05
	All classes together	2·65	1·18	1·43	2·07	1·04	1·03	2·07	0·95	1·12
1892	3rd class	2·51	0·91	1·60	2·00	0·99	1·01	2·12	0·72	1·40
	All classes together	2·67	0·91	1·76	2·06	0·99	1·07	2·23	0·72	1·51
1895	3rd class	2·50	1·17	[illegible]	2·00	0·94	1·06	2·00	0·72	1·28
	All classes together	2·66	1·17	1·43	2·07	0·97	1·13	2·11	0·72	1·39
1898	3rd class	2·50	1·20	[illegible]	2·00	1·08	0·92	2·00	0·84	1·17
	All classes together	2·48	1·20	1·48	2·08	1·08	1·00	2·10	0·83	1·27
1901	3rd class	2·47	1·06	1·41	2·04	0·82	1·22	2·00	0·82	1·18
	All classes together	2·64	1·06	1·58	2·11	0·82	1·29	2·06	0·82	1·24
1904	3rd class	2·46	1·37	1·09	2·04	0·77	1·27	2·00	0·81	1·19
	All classes together	2·65	1·37	1·28	2·12	0·77	1·35	2·06	0·81	1·25
1907	3rd class	2·45	1·51	0·94	2·00	0·82	1·18	1·99	0·84	1·15
	All classes together	2·62	1·51	1·11	2·08	0·82	1·26	2·05	0·84	1·21
1910	3rd class	2·42	1·20	1·22	2·17	1·18	0·99	1·91	0·79	1·20
	All classes together	2·61	1·20	1·41	2·26	1·18	1·08	2·04	0·79	1·25
1913	3rd class	2·44	1·17	1·27	1·95	1·10	0·76	1·99	0·70	1·29
	All classes together	2·61	1·17	1·44	2·08	1·19	0·89	2·03	0·70	1·33
1915	3rd class	2·44	1·17	1·27	1·96	0·91	1·05	1·97	0·74	1·23
	All classes together	2·62	1·17	1·45	2·08	0·91	1·17	2·02	0·74	1·28

Passenger Traffic—contd.

		Bengal Nagpur.			Assam Bengal.			Burma.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1886	3rd class	..	..	..	..	..	..	3·00	1·87	1·13
	All classes together	..	..	..	..	..	..	3·11	1·87	1·24
1888	3rd class	2·02	1·38	0·64	..	..	..	3·00	1·50	1·50
	All classes together	2·08	1·38	0·70	..	..	..	3·10	1·50	1·60
1892	3rd class	1·99	1·46	0·53			..	3·00	1·03	1·97
	All classes together	2·08	1·46	0·62			..	3·11	1·03	2·08
1895	3rd class	2·00	1·30	0·70	..	..		3·00	1·34	1·66
	All classes together	2·10	1·30	0·80	..	..	..	3·14	1·34	1·80
1898	3rd class	2·00	1·77	0·23	3·00	1·83	1·17	2·65	1·27	1·38
	All classes together	2·13	1·77	0·36	3·11	1·83	1·28	2·84	1·27	1·57

1901	3rd class	2·28	1·07	1·21	3·00	1·80	1·20	3·04	1·44	1·60
	All classes together	2·40	1·07	1·33	3·10	1·80	1·30	3·20	1·44	1·76
1904	3rd class	2·34	1·05	1·29	2·96	2·40	0·56	3·01	1·51	1·50
	All classes together	2·50	1·05	1·45	3·09	2·40	0·60	3·16	1·51	1·65
1907	3rd class	2·35	1·04	1·31	2·84	2·20	0·64	2·99	1·73	1·26
	All classes together	[illegible]	1·04	1·47	2·99	2·20	0·79	2·17	1·73	1·44
1910	3rd class	2·40	1·08	1·32	2·81	1·98	0·83	2·94	1·63	1·36
	All classes together	2·55	1·08	1·47	2·97	1·98	0·99	3·16	1·63	1·58
1913	3rd class	2·44	1·03	1·41	2·72	1·56	1·16	2·99	1·35	1·64
	All classes together	2·60	1·03	1·57	2·85	1·56	1·29	3·16	1·35	1·81
1915	3rd class	2·44	0·98	1·46	2·69	1·85	0·84	2·99	1·60	1·39
	All classes together	2·62	0·98	1·64	2·82	1·85	0·97	3·16	1·60	1·56

Passenger Traffic—concld.

		Indian Midland.			Southern Mahratta.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1888	3rd class	2·65	2·00	0·65	2·49	74	0·75
	All classes together	2·82	2·00	0·82	2·61	1·74	0·87
1892	3rd class	2·54	1·56	0·98	2·28	1·50	0·78
	All classes together	2·83	1·56	1·27	2·39	1·50	0·89
1895	3rd class	2·54	1·77	0·77	2·00	1·15	0·85
	All classes together	2·90	1·77	1·13	2·13	1·15	0·98
1898	3rd class	2·55	1·45	1·10	2·00	1·52	0·48
	All classes together	2·87	1·45	1·42	2·18	1·52	0·66
1901	3rd class	Amalgamated with Great Indian Peninsula Railway			2·03	1·62	0·41
	All classes together				2·16	1·62	0·54
1904	3rd class				2·10	1·38	0·72
	All classes together		..		2·27	1·38	0·89
1907	3rd class		.	.	2·08	1·32	0·76
	All classes together				2·25	1·32	0·93
1910	3rd class	.	..		Amalgamated with Madras Railway.		
	All classes together						

APPENDIX VI.

Goods Traffic, (average rate, average cost and average profit.)

		East Indian			Great Indian Peninsula.			Bombay, Baroda and Central India			Madras.		
		Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile	Average profit in carrying one ton of goods one mile	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile	Average profit in carrying one ton of goods one mile	Average sum received for carrying one ton of goods one mile	Average cost of carrying one ton of goods one mile	Average profit in carrying one ton of goods one mile	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	1st or Lowest class	..	.		1			10			8 12	..	..
	All classes together	9 92	3 248	6 672	12 72	7 76	4 96	12	8	4	11 6	5 36	6·24
1873	1st or Lowest class	9	3 412	5 588	10	7 824	2 176	10	7 632	2 368	12	5 424	6·576
	All classes together	8 416	3 412	5 004	13 [illegible] or 12 [illegible]	7 824	[illegible] 72	1[illegible] 64 or 12 [illegible]64	7 6[illegible]2	4 632	9 864	5 424	4 44
1875	1st or Lowest class	9 073	3 468	5 605	10	5 296	4 704	10	4 848	5 152	12	7 232	4 768
	All classes together	8 62	2 468	5·152	11 984	5 296	6 688	11 04	4 848	6 192	9 552	7 232	2 32
1877	1st or Lowest class	9 073	1 744	7 329	10	3 96	6 04	10	3 16	6 84	10	4 744	5 256
	All classes together	6 536	1·744	4 792	8 024	3 96	4 064	9 84	3 16	6 68	7 76	4 744	3 016
1879	1st or Lowest class	9·073	1·856	7 217	10	4 656	5 344	10	3·536	6 464	10	5·064	4·936
	All classes together	6·784	1 856	4 928	8·704	4 656	4·048	8 816	3 536	5 28	8 48	5 064	3·416

Goods Traffic—contd.

		East Indian.			Great Indian Peninsula.			Bombay, Baroda and Central India.			Madras.		
		Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1882	1st or Lowest class	9·07	2 34	6·739	10 pies up to 400 miles; 9½ between 400 & 600 miles 9 pies over 600 miles	4 05	5 95 5 45 4 95	10 89	3 61	7 28	10	6·19	3·81
	All classes together	6 43	2 34	4 09	9 76	4 05	5 71	9 19	3 61	5 58	8 79	6·19	2·60
1884	1st or Lowest class	9·07	2 46	6 613	9 07	4 01	5 06	9 to 10	4 02	4·98 to 5·98	10	5·43	4·57
	All classes together	6 32	2 46	3 86	8 15	4 01	4 14	8 7	4 02	4 68	7·72	5·43	2·29
1886	1st or Lowest class	9·07	2 15	6·92	10 00 9 50 9 00	3 93	..	10 89 and 9 53	3·62	..	10 00	5·12	4·88
	All classes together	5 84	2 15	3 69	8 63	3 93	4·70	7 75	3 62	4·11	7·67	5·12	2·55
1888	1st or Lowest class	8·98	2·04	6·94	10·07 9 53 8 98	3 87	..	10·89	3·53	7·36	10·07	4·96	5·11
	All classes together	5·68	2 04	3 64	8·22	3·87	4·35	7·82	3 53	4·29	7·81	4 96	2·85

1892 .	1st or Lowest class .	9·07	1·62	7·45	10·8 9·58 9·07	3·93	..	10·89	3·41	7·48	10·08	4·52	5·56
	All classes together .	5·34	1·62	3·72	8·15	3·93	4·22	7·75	3·41	4·34	8·30	4·52	3·78
1895 .	1st or Lowest class .	9·07	1·63	7·44	10·08 9·53 9·07	4·39	..	10·89	3·00	7·89	10·08	4·43	5·65
	All classes together .	4·87	1·63	3·24	8·57	4·39	4·18	7·86	3·00	4·86	8·40	4·43	3·97
1898 .	1st or Lowest class .	9·07	1·56	7·51	10·07 9·53 9·07	3·57		10·89	3·22	7·67	10·07	4·32	5·75
	All classes together .	4·62	1·56	3·06	7·06	3·57	3·49	7·54	3·22	4·32	8·35	4·32	4·03
1901 .	1st or Lowest class .	..	1·65	..		3·15			3·06	..	..	3·41	..
	All classes together .	4·39	1·65	2·74	6·89	3·15	2·74	7·18	3·06	4·12	5·95	3·41	2·54
1904 .	1st or Lowest class .	..	1·41	..		2·97	..	..	3·15	..	..	4·13	..
	All classes together .	4·04	1·41	2·63	6·12	2·97	3·35	7·59	3·15	4·44	6·57	4·13	2·44
1907 .	1st or Lowest class .	..	1·55	..	..	2·93	..	..	2·50	..	..	4·75	..
	All classes together .	3·76	1·55	2·21	5·84	2·93	2·91	5·89	2·50	3·39	6·63	4·75	1·88
1910 .	1st or Lowest class .	..	1·37	..	..	2·69	..	..	2·96	..	..	3·71	..
	All classes together .	3·31	1·37	1·94	5·12	2·69	2·43	6·83	2·96	3·87	6·12	2·72	2·41
1913 .	1st or Lowest class .	..	1·32	..	..	2·71	..	..	2·70	..	..	3·48	..
	All classes together .	3·18	1·32	1·56	4·75	2·71	2·04	6·13	2·70	3·43	5·96	3·48	2·48
1916 .	1st or Lowest class .	..	1·22	..	..	2·51	..	..	2·52	..	..	3·05	..
	All classes together .	2·85	1·22	1·63	4·48	2·51	1·97	5·76	2·52	3·24	5·57	3·05	2·52

Goods Traffic—contd.

		SCINDE, PUNJAB AND DELHI.			EASTERN BENGAL.			OUDH AND ROHILKHAND.			SOUTH INDIAN.		
		Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871 .	1st or Lowest class .	10	..	..	9	..	..	7 9	..	..	12	..	..
	All classes together .	..	..	..	..	..	..	..	..	..	..	..	..
1873 .	1st or Lowest class .	10	..	..	9	..	..	9	..	..	12	..	..
	All classes together .	..	..	..	..	..	..		..	..	..	..	..
1875 .	1st or Lowest class .	9·07	4·888	4·182	9·33	5·616	3·714	9·08	..	..	12	..	..
	All classes together .	9·76	4·888	4·872	9·888	5·616	4·272	..	..	..	..	..	..
1876 .	1st or Lowest class .	9·07	..	..	9·79	3·76	6·03	6·08	4·896	1·184	12	..	..
	All classes together .	..	..	..	9·48	3·76	5·72	7·048	4·896	2·152	..	..	..
1877 .	1st or Lowest class .	9·07	3·976	5·094	8·99	2·886	6·104	6·8	3·12	3·68	12	4·72	7·28
	All classes together .	8·48	3·976	4·504	9·2	2·886	6·314	5·72	3·12	2·6	(narrow gauge) 7·632	4·72	2·912
1879 .	1st or Lowest class .	9·07	4·4	4·67	8·46	3·56	4·90	6·8	3·256	3·544	12	..	..
	All classes together	9·184	4·4	4·784	10·32	3·56	6·76	6·32	3·256	3·064	..	..	..
1882	1st or Lowest class .	9·07	5·83	3·24	9·07	5·17	3·90	6·8	·99	5·81	9	6·95	2·05
	All classes together .	8·32	5·83	2·49	9·38	5·17	4·21	5·41	·99	4·42	7·83	6·95	0·88

1884	1st or Lowest class	9·07	4·31	4·76	9·07	6·26	2·81	6·8	3·92	2·88	9·07	6·35	2·72
	All classes together[4]	6·74	4·31	2·13	8·56	6·26	2·30	5·6	3·92	1·68	8·18	6·35	1·83
1886	1st or Lowest class	9·07	3·57	5·50	9·07	5·86	3·21	6·80	3·07	3·73	9·07	6·21	2·86
	All classes together	6·41	57	2·87	8·83	5·86	2·97	4·62	3·07	1·55	7·53	6·21	1·32
1888	1st or Lowest class	8·98	4·23	4·75	8·98	4·91	4·04	6·80	3·53	3·27	8·98	6·35	2·63
	All classes together	5·76	4·23	1·53	9·41	4·91	4·47	5·01	3·53	1·48	7·03	6·35	0·68
1892	1st or Lowest class	9·07	3·38	5·69	9·07	3·77	5·30	9·07	2·95	6·12	9·07	5·70	3·28
	All classes together	5·88	3·38	2·50	8·22	3·77	4·45	5·89	2·95	2·94	7·38	5·70	1·59
1895	1st or Lowest class	9·07	2·71	6·36	9·07	3·32	5·75	9·07	3·03	6·04	9·07	5·12	3·05
	All classes together	5·34	2·71	2·73	8·80	3·22	5·48	5·42	3·03	2·39	7·99	5·12	2·87
1898	1st or Lowest class	9·07	2·63	6·44	9·07	3·11	5·96	9·07	3·07	6·00	9·07	4·78	4·20
	All classes together	5·27	2·63	2·84	7·88	3·11	4·77	5·70	3·07	2·63	8·60	4·78	3·82
1901	1st or Lowest class	.	2·67		.	3·90	.	.	2·56	..	..	4·02	..
	All classes together	07	2·67	1·40	8·11	3·90	4·21	5·31	2·56	2·75	8·31	4·02	4·29
1904	1st or Lowest class	.	2·23			4·00		..	2·53	.	..	3·79	..
	All classes together	4·64	2·23	2·41	7·27	4·00	3·27	4·71	2·53	2·15	7·32	3·79	3·53
1907	1st or Lowest class		2·25			4·25	.		3·35	.	..	4·16	..
	All classes together	4·42	2·25	2·17	6·99	4·25	2·74	5·04	3·35	1·69	7·07	4·16	2·91
1910	1st or Lowest class		3·06	..		3·83	.	..	2·61	.	..	4·00	..
	All classes together	4·80	3·06	1·74	6·62	3·83	2·79	4·85	2·61	2·24	6·80	4·00	2·80
1913	1st or Lowest class	..	2·48	.		3·83		.	2·65	.		4·08	..
	All classes together	4·75	2·48	1·87	6·48	3·83	2·67	4·89	2·65	2·15	6·84	4·08	2·76
1915	1st or Lowest class	.	2·53	..	.	4·04			2·60	.	..	2·87	..
	All classes together	4·20	2·53	1·67	6·59	4·04	2·55	4·92	2·60	2·32	6·22	2·87	3·35

Goods Traffic—contd.

		BENGAL AND NORTH-WESTERN.			BENGAL NAGPUR.			ASSAM BENGAL.			BURMA.		
		Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1886	1st or Lowest class	9·07	3·47	5·60	..	..	..	..	..	..	12·27	5·78	6·49
	All classes together	5·62	3·47	2·15	..	..	..	..	..	..	8·51	5·78	2·73
1888	1st or Lowest class	8·98	3·57	5·41	10·07	4·42	5·65	..	..	..	12·25	5·63	6·62
	All classes together	5·87	3·57	2·30	8·61	4·42	4·19	..	..	..	7·14	5·63	1·51
1892	1st or Lowest class	9·07	2·46	6·61	9·07	3·92	5·15	..	..	..	12·25	5·31	6·94
	All classes together	5·60	2·46	3·14	7·54	3·92	3·62	..	..	..	6·61	5·31	1·30
1895	1st or Lowest class	9·07	2·93	6·14	9·07	3·55	5·52	..	..	..	9·07	5·49	3·58
	All classes together	6·14	2·93	3·21	6·73	3·55	3·18	..	..	..	7·09	5·49	1·60
1898	1st or Lowest class	9·07	2·42	6·65	9·07	3·11	5·96	9·07	6·38	2·69	9·07	4·85	4·22
	All classes together	5·54	2·42	3·12	6·18	3·11	3·07	4·44	6·38	—1·94	6·95	4·85	2·10
1901	1st or Lowest class	..	2·54	..	..	3·38	..	..	5·50	..	..	4·83	..
	All classes together	5·45	2·54	2·89	5·45	3·38	2·07	6·04	5·50	0·54	7·04	4·83	2·21
1904	1st or Lowest class	..	2·26	..	..	2·76	..	..	6·15	..	..	4·64	..
	All classes together	5·53	2·26	3·27	5·11	2·76	2·35	5·48	6·15	—0·67	7·37	4·64	2·73
1907	1st or Lowest class	..	2·34	..	..	2·26	..	..	4·87	..	..	4·59	..
	All classes together	5·48	2·34	3·14	4·93	2·26	2·67	5·07	4·87	0·20	6·43	4·59	1·84
1910	1st or Lowest class	..	2·27	..	..	1·91	..	..	4·29	..	..	4·36	..
	All classes together	5·39	2·27	3·12	3·63	1·91	1·72	4·41	4·29	0·12	6·33	4·36	1·97
1913	1st or Lowest class	..	2·15	..	..	1·81	..	..	4·11	..	..	4·00	..
	All classes together	5·49	2·15	3·31	3·70	1·81	1·89	5·23	4·11	1·12	6·69	4·00	2·69
1915	1st or Lowest class	..	2·25	..	..	1·59	..	..	4·69	..	..	4·07	..
	All classes together	5·57	2·25	3·32	3·27	1·59	1·68	5·35	4·69	0·66	6·54	4·07	2·47

Goods Traffic—contd.

		Indian Midland.			Southern Mahratta		
—		Average sum received for carrying one ton one mile	Average cost of carrying one ton of goods one mile	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies	Pies.	Pies	Pies.	Pies.
1888 . . .	1st or Lowest class	8·98	6·13	2·85	9·25	6·62	2·63
	All classes together	8·22	6·13	2·09	7·86	6·62	1·24
1892 . . .	1st or Lowest class	9·07	4·47	4·60	9·07	6·02	3·05
	All classes together	6·63	4·47	2·16	7·96	6·02	1·94
1895 . . .	1st or Lowest class	9·07	4·69	4·38	9·07	4·56	4·51
	All classes together	7·15	4·69	2·46	6·95	4·56	2·39
1898 . . .	1st or Lowest class	9·07	3·66	5·41	9·07	4·77	4·30
	All classes together	6·20	3·66	2·54	6·50	4·77	1·73
1901 . . .	1st or Lowest class	..	..	..		5·05	..
	All classes together	..	..	..	6·90	5·05	1·85
1904 . . .	1st or Lowest class	..	..	..	..	4·52	..
	All classes together	..	..	..	6·71	4·52	2·19
1907 . . .	1st or Lowest class	..	..	..	..	3·91	..
	All classes together	..	..	..	6·35	3·91	2·44

APPENDIX VII.

Names of Railways.	1 Mileage open at the end of each year.	2 Total capital outlay, including suspense to end of each year, i.e., outlay on (i) lines open or (ii) lines partly or wholly under construction.	3 Gross earnings.	4 Net earnings.	5 Percentage of net earnings on total capital outlay given in column (2)	6 Earnings per mile per week	7 Proportion of expenses to earnings.
			1904.				
		Rs	Rs	Rs.		Rs.	
Bengal-Nagpur Railway (5′ 6″ gauge)	1,965·68	26,14 35,453	1,89,12,137	95,87,326	3·67	185	49·31
Bombay, Baroda and Central India Railway (3′ 3⅜″ gauge).	..	..	..	..		..	..
Eastern Bengal Railway (5′ 6″ gauge)	971·31	16,55,23,769	1,94,63,098	88,23,372	5 33	374	54 67
East Indian Railway (5′ 6″ gauge)	1,932 87	50,26,09,029	7,59,71,544	5,06,03,115	10·07	749	33·39
Great Indian Peninsula Railway (5′ 6″ gauge)	1,561 63	32,00,72,108	4,82,41,344	2,41,79,728	7·55	592	49·88
Madras and Southern Mahratta Railway (5′ 6″ gauge)	..	..	..	..	..	..	..
North-Western Railway (proper) (5′ 6″ gauge)	3,317·54	55,14,60,717	6,16,56,310	3,22,92,909	5·86	361	47·60
North-Western Railway (Southern Punjab Railway Section) (5′ 6″ gauge).	425·33	2,29,43,454	27,47,442	13,18,772	5·74	124	52·00
Oudh and Rohilkhand Railway (proper) (5′ 6″ gauge)	1,237·65	14,96,63,929	1,52,96 206	71,33,117	4 76	241	53·37
South Indian Railway (3′ 3⅜″ gauge)	1,123 13	8,45,16,652	1,25,12,321	69,62,790	8 24	214	44·35
Assam-Bengal Railway (3′ 3⅜″ gauge)	740 38	12,60,09 639	29,53,962	1,05,320	0 08	77	96·43
Bengal and North-Western Railway proper (3′ 3⅜″ gauge.	870 80	6,43 92 183	67,16,933	43,28,496	6 90	147	35·56
Bengal and North-Western Railway (Tirhoot Section) (3′ 3⅜″ gauge)	..	..	..	..	..	..	..
Rohilkund and Kumaon Railway proper (3′ 3⅜″ gauge)	53·92	43,55,575	4,18,787	2,24,403	5·15	122	46·41
Rohilkund and Kumaon Railway (Lucknow Bareilly Branch) (3′ 3⅜″ gauge).	237·04	1,17,14,505	14,96,120	7,97,671	6 81	133	46 68

		1906.					
Bengal-Nagpur Railway (5' 6" gauge)	1,996·50	28,49,48,582	2,69,47,181	1,41,51,252	4·97	259	47·49
Bombay, Baroda and Central India Railway (5' 6" gauge).	504 35	12,63,16.478	1,99,81,754	1,05,39,688	8·34	809	47·27
Bombay, Baroda and Central India Railway (3' 3⅜" gauge).	1,915 30	16,65,57,367	2.80,04,905	1,47,43,530	8 35	281	47 85
Eastern Bengal Railway (5' 6" gauge)	1,271 29	20,23,60,593	2,46.31,081	1,06,08,661	5 24	360	56·93
East Indian Railway (5' 6" gauge)	2,165·04	54,79,28 490	8,02,50.910	4,87,53,855*	8 90	721†	38·65
Great Indian Peninsula Railway (5' 6" gauge)	1,561·63	33,57,64,972	5,05 23,479	2,53,01,900	7·54	623	49·92
Madras and Southern Mahratta Railway (5' 6" gauge)	..	..	..	..	..	..	..
North-Western Railway (proper) (5' 6" gauge)	3,503 69	60,67,74,838	6,18,66,041	2,93 40,919	4 84	343	52·57
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge)	425 33	2 31 30 148	41.67,059	20,00 188	8 65	188	52·00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,292,16	15,71 99 731	1 64 67 329	78,15,731	4 97	249	52·54
South Indian Railway (3' 3⅜" gauge)	1 130 00	8 91,97,605	1 32.75,245	58,92,976	6 61	227	55·61
Assam Bengal Railway (3' 3⅜" gauge)	775 28	1 25 20 704	42 20,064	4 27,858	0 30	104	89 86
Bengal and North-Western Railway proper (3' 3⅜" gauge)	932 18	7 13 66 623	77 02 976	40 92 699	6·00	142	46·90
Bengal and North-Western Railway Tirhoot Section (3' 3⅜" gauge)	614 30	6 73 40,339	66 80,324	38,97,310	5 50	189	41·52
Rohilkund and Kumaon Railway proper (3' 3⅜" gauge)	117 87	1 16,53,319	8,03,607	3 65 161	3·13	124	54·56
Rohilkund and Kumaon Railway (Lucknow Bareilly Railway Section) (3' 3⅜" gauge)	237 04	1 20,09,655	16,55 250	8,36 782	6 97	148	49·46
		1909.					
Bengal-Nagpur Railway (5' 6" gauge)	2 348 63	33 91 49 381	2 87,72 437	1 31,42 676	3 88	236	54·32
Bombay, Baroda and Central India Railway (5' 6" gauge)	504 35	11 18,69 493	2,21,36 727	1,17 56 514	8·29	844	46·89
Bombay, Baroda and Central India Railway (3' 3⅜" gauge).	1 919 72	18 04 84,544	2 51,98 990	1 08,98 636	6·04	252	56 75
Eastern Bengal Railway (5' 6" gauge)	1,503 09	24,27.44,601	2 77,24,064	97,10,666	4 00	355	64 97
East Indian Railway (5' 6" gauge)	2 212 07	60,27,01,643	8,28 35,189	*4,77,90,961	7 93	†695	41 73
Great Indian Peninsula Railway (5' 6" gauge)	1,599·53	37,23,51,484	5 27 26 707	2,23,43,894	6 08	634	57 62

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* Excludes the annual rental paid to the South Bihar Railway Company together with the interests on Government advances for the purposes of this Railway

† Includes the South Bihar Railway.

Names of Railways.	1 Mileage open at the end of each year.	2 Total capital outlay, including suspense to end of each year, *i.e.*, outlay on (i) lines open and (ii) lines partly or wholly under construction.	3 Gross earnings.	4 Net earnings.	5 Percentage of the net earnings on total capital outlay given in column (2).	6 Earnings per mile per week.	7 Proportion of expenses to earnings.
		1909—*contd.*					
		Rs.	Rs.	Rs.		Rs.	
Madras and Southern Mahratta Railway (5′ 6″ gauge)	1,031·73	17,06,51,720	1,79,33,335	72,97,315	4·28	334	59·31
North-Western Railway (5′ 6″ gauge)	3,723·91	72,31,90,764	6,79,03,754	2,13,69,240	2·95	355	68·48
North-Western Railway (Southern Punjab Railway Section) (5′ 6″ gauge).	424·06	2,35,69,932	33,15,733	15,91,551	6·75	150	52·00
Oudh and Rohilkhand Railway (5′ 6″ gauge)	1,310·52	17,78,51,571	1,61,86,594	45,93,282	2·58	238	72·76
South Indian Railway (3′ 3⅜″ gauge)	1,395·61	15,57,78,715	2,17,41,647	1,01,90,046	6·54	300	53·13
Assam-Bengal Railway (3′ 3⅜″ gauge)	770·84	14,31,45,488	49,14,893	4,47,461	0·31	122	90·90
Bengal and North-Western Railway proper (3′ 3⅜″ gauge).	1,091·56	8,44,52,801	80,65,653	43,59,479	5·27	142	45·95
Bengal and North Western Railway (Tirhoot Section) (3′ 3⅜″ gauge).	774·69	7,42,61,067	75,53,873	40,09,582	5·28	188	46·92
Rohilkund and Kumaon Railway proper (3′ 3⅜″ gauge)	202·06	1,36,93,877	12,70,929	6,26,391	4·57	121	50·71
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3′ 3⅜″ gauge).	237·04	1,43,82,316	17,17,491	7,84,749	5·46	139	54·31
		1910.					
Bengal-Nagpur Railway (5′ 6″ gauge)	2,395·39	34,75,04,066	3,08,52,867	1,50,32,327	4·33	248	51·28
Bombay, Baroda and Central India Railway (5′ 6″ gauge).	504·35	14,32,24,042	2,40,62,075	1,24,94,573	8·72	917	48·07
Bombay, Baroda and Central India Railway (3′ 3⅜″ gauge).	1,919·64	18,18,63,774	2,85,10,644	1,44,84,804	7·96	286	49·20
Eastern Bengal Railway (5′ 6″ gauge)	1,507·73	25,55,91,026	2,83,74,562	1,16,98,257	4·58	366	58·77

East Indian Railway (5' 6" gauge)	2,212 77	60,82,23,218	8,60,42,147	5,20,01,256*	8 54	722†	39·01
Great Indian Peninsula Railway (5' 6" gauge)	1,606 24	38,67,82,534	5,58,44,731	2 58,06,771	6·67	705	56·14
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031·73	17,37,06,686	1,88,12,095	80,93,571	4·66	351	56·98
North-Western Railway (5' 6" gauge)	3,725 89	73,64,05,633	7,41,00,787	2,51,73,007	3·41	382	65·99
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge)	424 06	2,39,18,571	43,21,320	20,74,234	8 67	196	52·00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,406 75	18,58,11,081	1,83,03,844	88,80,832	4 78	253	51·48
South Indian Railway (3' 3⅜" gauge)	1,395 61	16,08,95,627	2,24,50,591	1,02,34,257	6 36	309	54·43
Assam-Bengal Railway (3' 3⅜" gauge)	789 89	14 45 68 076	51 70,052	7,84,033	0 54	126	84·83
Bengal and North-Western Railway proper (3' 3⅜" gauge)	1,117 14	8 92 16,995	84,58,223	48,85,946	5 77	146	42 23
Bengal and North-Western Railway (Tirhoot Section) (3' 3⅜" gauge)	776 13	7,46,12 530	83,14,066	48,01 820	6 09	206	42 24
Rohilkund and Kumaon Railway proper (3' 3⅜" gauge)	202 06	1,52 28,920	13,46,150	7,62,425	5 00	128	43 36
Rohilkund and Kumaon Railway (Lucknow Bareilly Section) (3' 3⅜" gauge)	237 04	1,60,60 757	18,25,185	10,15,746	6 32	148	44 35

1911.

Bengal-Nagpur Railway (5' 6" gauge)	2,488 92	35,59,06 842	3 39 70,044	1 68 21 823	4 73	262	50·48
Bombay, Baroda and Central India Railway (5' 6" gauge).	504 35	14 92,98,743	2,47 34,178	1,23 48,704	8 27	943	50·07
Bombay, Baroda and Central India Railway (3' 3⅜" gauge).	1 917 73	18 23 81 723	3,08 25 507	1,50 83 603	8 27	309	51·07
Eastern Bengal Railway (5' 6" gauge)	1 509 62	27 11,51,904	3,15 19 653	1,17 55 253	4 33	402	62 70
East Indian Railway (5' 6" gauge)	2 265 86	62 08 94,930	9 22,36 385	5 59 09,018*	9 00	756†	38·87
Great Indian Peninsula Railway (5' 6" gauge)	2,420 40	52 81 05 122	7,21,04,393	3,21,75,319	6 09	573	55·38
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031 73	17.73 67 663	1,96,36 910	89 15,549	5 03	366	54·60
North-Western Railway (5' 6" gauge)	3 818 22	75.46.44,149	7,93,87 066	3 12,64,435	4 15	402	60·61
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424 06	2,43 04 411	50,29 087	24.13.962	9 93	228	52 00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,513 77	19,51,23,398	2,03,88,454	1.04 88,468	5 38	256	48 56
South Indian Railway (3' 3⅜" gauge)	1,395 61	16.28,91,154	2,49,91 786	1,24,16,673	7 62	344	50 32
Assam-Bengal Railway (3' 3⅜" gauge)	789 89	14,79,47,899	55,76,145	11,37,710	0 77	136	79·59

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* Excludes the annual rental paid to the South Bihar Railway Company together with interest on Government advances for the purpose of this Railway.

Names of Railways.	1 Mileage open at the end of each year.	2 Total capital outlay, including suspense to end of each year, *i.e.*, outlay on (i) lines open and (ii) lines partly of wholly under construction.	3 Gross earnings	4 Net earnings.	5 Percentage of net earnings on total capital outlay given in column (2).	6 Earnings per mile per week.	7 Proportion of expenses to earnings.
		1911—*contd.*					
		Rs.	Rs	Rs		Rs.	
Bengal and North-Western Railway proper (3' 3⅜" gauge)	1,175·84	9,31,80,852	99,29,872	57,59,938	6·48	162	42·01
Bengal and North-Western Railway (Tirhoot Section) (3' 3⅜" gauge).	769·04	7,56,16,782	89,15,376	52,68,210	6·60	223	40·91
Rohilkund and Kumaon Railway proper (3' 3⅜" gauge)	225 20	1,59,24,548	14,73,586	7,99,809	5·02	128	45·72
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3⅜" gauge).	257 57	1,72,02 079	19,40,488	10 44,604	6 07	152	46·17
		1912.					
Bengal-Nagpur Railway (5' 6" gauge)	2,489 92	36,36,14,944	4,02,62,849	2,18,48,526	6 01	311	45·74
Bombay, Baroda and Central India Railway (5' 6" gauge).	945 85	21,95,74,123	3,27,92,584	1,61,93,680	7·38	667	50 62
Bombay, Baroda and Central India Railway (3' 3⅜" gauge).	1,815·64	16,55,41,245	3,15,97,819	1,61,10,247	9·73	335	49·01
Eastern Bengal Railway (5' 6" gauge)	1,569 83	29,00,69,252	3,43,33,589	1,39,40,687	4·81	429	59·49
East Indian Railway (5' 6" gauge)	2,331 09	63,49,50,982	10,15,50,003	6,32,20,565*	9·96	810†	37·27†
Great Indian Peninsula Railway (5' 6" gauge) .	2,419 33	54,83,41,956	8,02,93,465	3,69,34,275	6·74	638	54 00
Madras and Southern Mahratta Railway (proper) (5' 6" gauge).	1.031 73	17,80,88 139	2,16,88,462	1,03,95,264	5·84	404	52·07
North-Western Railway (proper) (5' 6" gauge) . .	3,812 29	78,05,55,336	9,06,27,413	4,37,15,957	5·60	466	51·76
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424·06	2,47,35,830	58,22,883	28,23,784	11·41	267	52·00

Oudh and Rohilkhand Railway (5′ 6″ gauge)	1,604·14	20,17,91,270	2,45,19,400	1,39,76,826	6 92	294	43·00
South Indian Railway (proper) (3′ 3⅜″ gauge)	1,395 61	17,03,55,986	2,70,84,141	1,31,63,987	7·73	337	51·39
Assam Bengal Railway (3′ 3⅜″) gauge	804·99	15,04,29,093	64,50,146	17,29 637	1 15	155	73·18
Bengal and North-Western Railway (proper) (3′ 3⅜″ gauge).	1,177 27	9,68,79,261	1,12,49,175	73,19,499	7·91	184	34·93
Bengal and North-Western Railway (Tirhoot Section) (3′ 3⅜″ gauge).	791 51	7,82 44,847	98,30,665	64,73,034	7·83	239	34·15
Rohilkund and Kumaon Railway (proper) (3′ 3⅜″ gauge).	256 32	1 62,89,858	18,99,670	11,51,734	7 07	144	39·37
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3′ 3⅜″ gauge).	296 32	1,83 53 912	22,67,846	13,67,532	7·45	157	39·70
			1913-14.				
Bengal-Nagpur Railway (5′ 6″ gauge)	2,673 32	38,74,52,167	4,20,59,348	2,15,05,714	5 55	303	48·87
Bombay, Baroda and Central India Railway (5′ 6″ gauge).	996 23	21,56,10 283	3,60,65,069	1,83,83,393	7 80	721	49·03
Bombay, Baroda and Central India Railway (3′ 3⅜″ gauge)	1,815 64	16 78 56 869	2,98,50,716	1,47,44,027	8 78	316	50·61
Eastern Bengal Railway (5′ 6″ gauge)	1,581 43	32 69,88,602	3,75,42,065	1,66,52 046	5 09	460	55 64
East Indian Railway (5′ 6″ gauge)	2 424 20	66 70,44 170	10.26,92,832	6,13,38,602‡	9 20	789‡	39·81‡
Great Indian Peninsula Railway (proper) (5′ 6″ gauge)	2 484 03	59 49 23,530	8,57,95,516	3 40,52,063	5 72	664	60·31
Madras and Southern Mahratta Railway (5′ 6″ gauge)	1 061 75	18 26 82,343	2,26,70,849	1,04,31,713	5 71	423	53·99
North-Western Railway (proper) (5′ 6″ gauge)	4 011 62	83,24 56 549	8,67,13,050	3 67,40,434	4·41	423	57·63
North-Western Railway (Southern Punjab Railway Section) (5′ 6″ gauge)	424 06	2,56 22,112	57,93,323	27,80,795	10 85	263	52·00
Oudh and Rohilkund Railway (5′ 6″ gauge)	1 638 33	21,64,74 673	2,41.23,950	1,23,21,631	5·69	283	48·92
South Indian Railway (3′ 3⅜″ gauge)	1 453 60	18,26,41 473	2,80,70,002	1,17,27,795	6·42	373	58·22
Assam Bengal Railway (3′ 3⅜″ gauge)	811 73	15,70,22 687	70 42,793	22 71 129	1 45	167	67·75
Bengal and North-Western Railway (proper) (3′ 3⅜″ gauge)	1 240 12	9 89 54,245	1,06,80,308	63,85,474	6 87	166	40·21
Bengal and North-Western Railway (Tirhoot Section) (3′ 3⅜″ gauge).	788 16	8 67 86,297	1,02,64,997	64,76,739	7 50	250	36·90
Rohilkund and Kumaon Railway (proper) (3′ 3⅜″ gauge).	256 32	1 67 73 664	18,84,583	10,57,658	6·30	141	43·88
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section (3′ 3⅜″ gauge).	298 02	1 91 90 007	22,50,319	12,45,837	6·49	148	44·64

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* Excludes the annual rental paid to the South Bihar Railway Company together with interest on Government advances for the purposes of this Railway.
† Includes the South Bihar Railway.
‡ 1913-14. Includes the Cawnpore-Banda Railway.

Names of Railways.	1	2	3	4	5	6	7
	Mileage open at the end of each year	Total capital outlay, including suspense to end of each year, i.e., outlay on (i) lines open and (ii) lines partly or wholly under construction	Gross earnings.	Net earnings.	Percentage of net earnings on total capital outlay given in column (2)	Earnings per mile per week.	Proportion of expences to earnings.
1914-15.							
		Rs	Rs	Rs		Rs	
Bengal-Nagpur Railway (5′ 6″ gauge)	2,670 82	40,20,55,383	4,10,00,804	2,03,23,627	5·05	295	50·43
Bombay, Baroda and Central India Railway (5′ 6″ gauge).	996 30	24,41,98,2[illegible]	3,41,76,[illegible]99	1,65,02,921	6·76	660	51·71
Bombay, Baroda and Central India Railway (3′ 3⅜″ gauge).	1,815 64	17,10,31,551	2,86,44,574	1,32,97,462	7·77	303	53·58
Eastern Bengal Railway (5′ 6″ gauge)	1,659 05	35,01,65,002	3,32,49,234	1,14,97,734	3·28	401	65·42
East Indian Railway (5′ 6″ gauge)	2,445 63	70,52,95,287	10,55,97,327	6,25,79,018*	8·87	796†	38·16†
Great Indian Peninsula Railway (proper) 5′ 6″ gauge)	2,499 64	62,57,62,657	7,71,55,244	2,86,15,825	4·57	593	62·91
Madras and Southern Mahratta Railway (5′ 6″ gauge)	1,031 73	18,59,51,863	2,33,73,105	1,10,00,466	5·92	436	52·94
North-Western Railway (proper) (5′ 6″ gauge)	410 45	85,87,48,950	8,17,13,591	3,05,18,372	3·55	319	62·65
North-Western Railway (Southern Punjab Railway Section) (5′ 6″ gauge).	424 06	2,62,48,269	52,97,182	25,42,648	9·69	240	52·00
Oudh and Rohilkhand Railway (5′ 6″ gauge)	1,682 00	22,15,79,383	2,08,24,033	91,22,888	4·12	238	56·71
South Indian Railway (3′ 3⅜″ gauge)	1,455 17	18,75,61,9[illegible]2	2,72,73,211	1,15,22,805	6·14	359	57·75
Assam Bengal Railway (3′ 3⅜″ gauge)	847 98	16,24,85,226	68,85,473	17,31,408	1·07	156	74·85
Bengal and North-Western Railway (proper) (3′ 3⅜″ gauge).	1,238 67	9,91,40,377	1,08,71,200	65,71,263	6·95	169	39·55
Bengal and North-Western Railway (Tirhoot Section) (3′ 3⅜″ gauge).	788 45	8,17,15,012	95,03,765	58,14,830	6·72	232	38·82
Rohilkund and Kumaon Railway (proper) (3′ 3⅜″ gauge).	256 [illegible]2	1,60,38,847	15,58,479	7,39,623	4·37	117	52·54
Rohilkhand and Kumaon Railway (Lucknow-Bareilly Railway Section) (3′ 3⅜″ gauge).	312 51	2,02,30,297	19,40,856	8,79,923	4·35	119	54·66

* Excludes the annual rental paid to the South Bihar Railway Company together with the interests on Government advances for the purposes of this Railway.

† Include the South Bihar Railway.

APPENDIX VIII.

DIFFERENCE BETWEEN OWNER'S RISK AND RAILWAY RISK RATES FOR GOODS TRAFFIC.

The question of responsibility of railways in the matter of goods booked at owner's risk affects the trade very considerably. When the railways are protected by risk notes, the merchants have to take risks and yet in some cases, they cannot help taking advantage of the lowest rates, for generally the lowest rates are the trade rates introduced by the railways to develop the traffic, and when such rates are quoted the railway risk rates are higher.

In some cases the difference is 100 per cent., for instance in the case of ghee, while the railway risk rate for distances of over 150 miles is ⅔rd pie per maund per mile, the owner's risk rate is ⅓rd pie per maund per mile. It has been said by some that if the railways did not want to compel the traders to take the advantage of the owner's risk rates, they would make the difference between the railway risk rates and owner's risk rates such as would enable the merchants to take advantage of an alternative rate, *i.e.*, the railway risk rate should not be so high as would be unprofitable to the trader if he wanted to take advantage of it.

In this connection one cannot do better than to quote the following remarks from the article which appeared in the "Empire" on 20th July 1911 and 3rd August 1911, in connection with the report of the Departmental Committee of the Board of Trade on agreements and amalgamations, under the signature of Mr. R. D. Mehta, C.I.E.

"I have now received a copy of the above report, which has recently been issued and submitted to both Houses of Parliament by command of His Majesty. It may be truly said that this report hardly affects Indian Railways, but I find that some of the opinions expressed by the members of the committee are identical with those expressed by me in certain of my articles on the subject of "Railway Rates," and it will, therefore, be interesting to the public to know that the grounds of my complaints are reasonable and they require to be remedied.

"Owner's risk rates."—In my article No. II which appeared on the 29th March 1911, it was observed that difference between the Railway risk and owner's risk rates was too high in some cases. I cited an instance, where the railway risk rate was 120 per cent. greater than the owner's risk rate, and although the railways had what they call an alternative railway risk rate it was not "a reasonable alternative rate" in that it could not possibly be availed of by the public with any chance of profit in business. In my article No. II, I asked "can any merchant avail himself of this Railway risk rate, with any chance of profit, and would the Railway Company get any traffic if the merchants were to avail themselves of the Railway risk rate and the lower owner's risk rate was not used ?" I suggested that the railway risk rate should not be higher than the owner's risk rate by more than 4 or 5 per cent. Now it may be interesting to the public to know what persons like Mr. Russel Rea, M. P., Lord Hamilton of Delzell, C.V.O., Lord Newton, Mr. James Samuel Beale, and other members of the Departmental Committee of the Board of Trade have got to say in the matter of owner's risk rates. They remark in their report as follows :—

" It seems to us, however, that it is not in the public interest that railway companies should in fact be in a position to put undue pressure on traders to accept liability for loss or injury on traffic arising from their neglect."

" These remarks appear to have been made as the committee find that the railway risk rates are practically not " commercially reasonable alternative rates." They go on to say that " under the present interpretation of the law, however, it seems that any alternative companies risk rate, which is within the maximum, would be held to be a reasonable alternative even though it involved the payment of amount for insurance by the traders which was greatly in excess of the actuarial value of the risk so that the alternative rate was not commercially reasonable alternative."

" The Committee further go on to show that in the classification the owner's risk rates are at 10 per cent., 15 per cent. and 20 per cent. below the company's risk rates but that there are a number of special rates at owner's risk as regards which owner's risk is only one of the considerations on which special rate was granted. It is further remarked upon by the committee " that in such cases the owner's risk rate may be as much as 30 or 40 per cent. below the rate at which the railway companies carry at their risk " and these differences are apparently not considered reasonable as the members of the committee recognise that " the situation seems to constitute a legitimate grievance on the part of those traders, who are affected by it " and they recommend that " the difference in charge between the owner's and railway risk rates should be such as is reasonably sufficient to cover the risk of the company." I wonder what the members of the said committee would think when they know that on Indian Railways there are differences of 100 per cent. and more between the railway risk and owner's risk rates often to be seen. Every one knows that this year there has been a short crop of mangoes and instances have been brought to my notice, where owing to delays in transit fruits got rotten, and the merchants did not get a pie from the railways in the way of compensation for their loss, with the result that they tried to make up at least a part of their loss by increasing the price of mangoes, which were already selling dear. The railway authorities generally reply in such cases that they regret there has been a loss to the merchants owing to delay in transit but that as the goods were booked at owner's risk rates the railway cannot accept any liability. The railway risk rate for mangoes is 3rd class (⅔rd pie per maund per mile) and the owner's risk rate for a wagon load is 1st class (⅓rd pie per maund per mile) and the difference between the two rates is 100 per cent. "so that the railways practically compel the traders to despatch their goods at owner's risk rates." The poor merchants know that it is useless to appeal to railways as no claim for compensation would be admitted and hence they remain quiet and they as well as the public suffer."

"The dealers in fresh fruits in this country are entirely at the mercy of the railways, but as the loss to the fruit dealers affects the public so very immediately and greatly it is desirable that something should be done to bring home to the railways that the traffic booked at owner's risk should be as carefully dealt with as any other traffic. Of course, the railways would say that the remedy lies in fruits being booked at railway risk rates, but I have already pointed out that for fruits the "so called alternative railway risk rates" both by passenger and goods trains are one hundred per cent. higher than the owner's risk rates. It seems, however, that the loss in fruit traffic carried by railways is becoming so frequent that the dealers might eventually be compelled to despatch traffic at considerably higher rates than at present paid, in order to get the railways to deal with the traffic more carefully and to accept the risk. The result will be that fruits which are already dear, will be sold dearer still and the consumers will suffer. As a case in point, I would mention that a consignment of mangoes arrived at Sealdah from Maldah, but the wagon containing it is said to have *gone astray in the railway yard.* When the wagon was found and the mangoes were unloaded and offered to the poor waiting and anxious merchant for delivery the fruits were found to have gone entirely rotten and had to be thrown away. The Traffic Superintendent, Eastern Bengal State Railway, to whom the matter was represented, replied to the merchant as follows in his letter No. C. G. 89-64-11 of 31st July 1911 :—

"I regret very much that the delay complained of should have resulted in a loss of the value of the mangoes. As, however, the goods were carried at owner's risk, in consideration of the lesser rate of freight charged, I am unable to entertain your claim for compensation on account of your loss."

"The loss to the merchant in this case amounted to over Rs. 350 and the mere expression of regret on the part of the Traffic Superintendent, Eastern Bengal State Railway, is a very poor consolation to him. To a petty fruit dealer such a loss means complete loss of capital and consequent ruin. Is it right that the merchants forwarding their goods by railways should be ruined in this manner. I have been further informed that when a railway has to pay any claim to a merchant on account of loss sustained by

him in respect of goods booked at "railway risk" the railway recovers a portion of the amount of the compensation paid from their staff, but that in the case of goods booked at "owner's risk" no such recoveries are made from the staff as no compensation is paid. Therefore, the railway staff naturally do not pay as much attention to goods booked at owner's risk as to those booked at railway risk. They also know very well that fruits and ghee are always booked at owner's risk. Pilferages from tins of ghee and baskets of fruits and delays to fruit traffic are often heard. I have already shown in my letter XV that even the differences of 10 to 40 per cent. between the railway risk and owner's risk rates have been considered unfair in England and it has been recognised by the members of the Board of Trade Departmental Committee in England that the traders have a "legitimate grievance" against railways in this respect, and steps are being taken to remedy the evil by providing that the alternative railway risk rates should be "Commercially reasonable alternative rates" and similar steps should be taken in India as early as possible. In America, the fruit traffic is given special treatment and is carried as "fast freight," every care being taken that the fruit wagons are pushed on as expeditiously as possible; with this facility offered by the railways in the way of quick transit combined with safety, and under fostering railway rates the fruit traffic in America has assumed very large proportions. It is true that some railways in India have quoted wagon rates for fruits but this alone will have no effect in developing the fruit traffic, and until the fruit dealers are in the fear of running the risk of losing all their money in fruit trade any day through the negligence of the railway staff any great development in trade in fruits can hardly be expected. The railways in their own interests ought to offer protection to the public, as any appreciable development in the trade in fruits must mean more money to railways and it will soon be seen that large sums will be invested in fruit gardens and a flourishing trade will be created to the great advantage of the people of the country."

On page 96 of the said Bengal Nagpur Railway Tariff there is an entry of a rate of Re. 0-9-11 for grain, pulses and seeds common from Gondia to Bombay *viâ* Nagpur. The foot note at the bottom of this page shows that in respect of rice this rate is an owner's risk rate. The Bengal Nagpur Railway proportion of this rate is Re. 0-2-11 per maund for a distance of 81 miles from Gondia to Nagpur. Now the maximum rate which the Bengal Nagpur Railway are authorised to charge over this distance is Re. 0-2-11 per maund, (⅓rd pie per maund per mile plus 8 pies terminal). Therefore the maximum rate and the owner's risk rate are the same. **It is difficult to understand what the alternative railway risk rate is in this case; apparently none, unless it is a higher rate than the maximum. But this is not a solitary instance. The Bengal Nagpur Railway proportions of the rates to Bombay on rice from other important despatching stations, such as Rajnandgaon and**

Raipur, are Re. 0-4-9 and Re. 0-5-11 respectively for distances of 146 and 188 miles. These are also maximum rates, plus exceptional terminals.

The Great Indian Peninsula Railway, on page 32 of the Goods Tariff Book No. II (in force from October 1916), have a rate of Re. 0-9-4 per maund from Jhansi to Bombay, which is an owner's risk rate for Rice; and at the same time this rate is qualified by the remark, "no other rates will apply."

It is seen from the Great Indian Peninsula Railway Goods Tariff Book No. II, No. 5 (in force from October 1916) that they quote a rate of Re. 0-8-10 for sugar at railway risk, irrespective of the condition as to wagon load from Bombay to Jubbulpore, to encourage the traffic in imported sugar. This rate on a distance of 616 miles works out to ·17 pie per maund per mile. But in the same tariff apparently for country sugar, the rate from Delhi to Jubbulpore, for sugar carried in wagon loads of 270 maunds is Re. 0-10-7, which works out to ·20 pie per maund per mile for a distance of 646 miles, and the rate is an owner's risk rate.

APPENDIX IX.

TERMINALS.

Terminals are levied in addition to the rates.

While the term " rate " represents the charge for carriage between two specific points, " terminals " include " charges in respect of stations, sidings, wharves, depôts, warehouses, cranes and other similar matters and of any services rendered thereat ". This is the definition provided for in the Indian Railways Act IX of 1890.

Railways levy " crane charges " and loading and unloading charges, in respect of goods in bulk or bulky goods, in addition to " terminals ". In such cases the " terminals " are intended to cover services other than loading and unloading.

In the case of Laljibhai *versus* Great Indian Peninsula Railway (16 Bombay 434) it was held that " terminals " " mean a charge for the use of goods stations and for the various duties a Railway Company, as common carriers, perform in connection with goods, consigned to them for carriage."

Terminals are permissive and a railway has the right to waive them, at its option, but in doing so, the railways are supposed to see that they do not create " undue preference " by levying a terminal in one case and not levying in another.

In a case of dispute between an user of a railway and a railway company as to whether a terminal charge is reasonable or not, the Governor General in Council may, if he thinks fit, refer the case to Railway Commissioners to be appointed for purposes of hearing and deciding the specific case.

A list of terminals levied by railways is given in the following pages.

Great Indian Peninsula Railway.—Terminals and short distance charges.

(1) *In local booking from all stations* (*except to or from Bombay or Dadar*), terminal of 4 pies per maund for the forwarding station, and 4 pies for the receiving station.

(2) *In local booking to or from Bombay or Dadar*, terminal of 6 pies per maund for Bombay or Dadar, and 4 pies for the other station.

(3) *In through booking including to or from Bombay or Dadar*, terminal of 6 pies per maund for the Great Indian Peninsula Railway, *except in the case of cross traffic.*

(4) When the distance over the Great Indian Peninsula Railway is less than 75 miles, *except in the case of cross traffic*, short distance charge of 3 pies per maund subject to the differential rule as to distance, in addition to the terminals specified in (1), (2), or (3) above. *If however,*

the terminals and the short distance charge aggregate more than 12 pies only 12 pies are charged.

Tolls.

The following tolls are charged on all traffic except where otherwise stated, and are levied in addition to the terminals and short distance charge specified above :—

	Pies per maund.	Rupees per wagon.
(1) To or from Colaba, except on traffic between Colaba and Cawnpore and *viá*, Agra and *viá* Khandwa and *viá* Amalner and *via*, stations Agra Cantonment to Delhi (both inclusive) and *viá*	2	2
(2) From Chandni Bandar	2	2

Bombay, Baroda and Central India Railway.—Terminal charges.

(1) On Bombay, Baroda and Central India Railway and other Branch lines except Rajpipla State Railway :—

	Pies per maund.
In local booking	6
In through booking	3 to 6

(2) On Rajpipla State Railway :—

		Pies per maund.
In local booking	*viá* Anklesvar	6
In through booking	*viá* Anklesvar	6

On cross traffic passing through junctions to and from foreign railways no terminal charge is levied.

(*a*) In the case of goods carried at wagon rates, except where otherwise stated, the terminal charge for distance under 75 miles is Rs. 2-0-0 per broad gauge 4-wheeled wagon and Rs. 1-4-0 per metre or narrow gauge 4-wheeled wagon, the differential rule as to distance to apply.

(*b*) For the following commodities, however, the terminal charge is levied as under :—

(1) On broad and metre gauge sections—

	Per 4-wheeled wagon. Rs.	A.	P.
Bamboos, bamboo chips, and firewood—			
On broad gauge section —			
For distances under 75 miles	2	0	0
On metre gauge section —			
For distances under 100 miles	2	0	0
Charcoal—			
For distances under 75 miles	2	0	0
Kuppas—			
(1) For distances under 75 miles	4	0	0
(2) For distances 75 miles and over	2	0	0
Rafters and timber—			
On broad gauge section—			
(1) For distances under 75 miles	4	0	0
(2) For distances 75 up to 100 miles	2	0	0

Note.—In booking between broad and metre gauge sections of the Bombay, Baroda and Central India Railway the terminal charge in the case of goods carried at wagon rates will be made according to the wagon used at the forwarding station, irrespective of the number of wagons used at the Tranship Junction station.

(2) On narrow gauge railways—

	Rs.	A.	P.
On bamboos, bamboo chips, charcoal, firewood, grass dry, and hay, rafters and timber.—			
Per broad gauge 4-wheeled wagon—			
In booking from Bombay, Baroda and Central India Railway and *viâ*	2	0	0*
Per narrow gauge 4-wheeled wagon—			
In other cases	1	4	0
On Kuppas	2	0	0

* Irrespective of the number of Narrow Gauge wagons used.

(*c*) Bogie vehicles will be charged at double and six-wheelers at one and a half times the rates for four-wheelers.

Short distance terminal charge.

1. A short distance charge of 3 pies per maund (in addition to the ordinary terminal charge), is made on all goods conveyed for distances under 75 miles on the Bombay, Baroda and Central India Railway Company's system; the differential rule as to distance to apply.

2. The short distance terminal charge will not apply to :—

(1) Rice and paddy.
(2) Cinders.
(3) Coal, coke and patent fuel, except in local booking.
(4) Coal ashes carried by contractors and charged at 0·13 pie per maund per mile.
(5) Foreign railway materials.
(6) Live stock.
(7) Military traffic.
(8) Mineral class goods chargeable at schedule rate H or at other schedule rates.

Toll charge.

On all goods booked to and from Carnac Bridge station in Bombay, extra charges noted below with certain exceptions will be made :—

	Pies per maund.
(1) In the case of maund rates	2
	Per 4-wheeled broad gauge truck. Rs.
(2) In the case of wagon—mile rates . . .	2

Transhipment charge.

A transhipment charge of 2 pies per maund is levied on traffic interchanged at Cawnpore Collectorgunge between the Great Indian Peninsula Railway, including Cawnpore-Khairada Section and the Bombay, Baroda and Central India Railway.

In through booking between the Oudh and Rohilkhand Railway and the Bombay, Baroda and Central India Railway *viâ* Cawnpore Collectorgunge, a transhipment charge of 2 pies per maund is levied on traffic booked to and from stations Cawnpore to Parkham, including the Brindaban and Brahmavart Branches, *viâ* Hathras Road, *viâ* Kasganj, and *viâ* Farukhabad.

North Western Railway.—Terminal charges.

	Pies per maund.
Local traffic—	
Upon all consignments of 2nd, 3rd, 4th, 5th and X class goods	6
Upon 1st class goods and goods chargeable at rates lower than 1st class	3
Through traffic—	
Upon goods of all classes	3
Cross traffic—	
Passing through junctions with foreign railways . .	No terminal.

Oudh and Rohilkhand Railway.—Terminal charges, (from tariff of 31st January 1914).

The following terminal and short distance charges are made on all classes of goods carried over the Oudh and Rohilkhand Railway, and the Hardwar-Dehra Railway, except where otherwise specified :—

	Over Oudh and Rohilkhand Railway.	Over Hardwar-Dehra Railway.
I. Terminal charges (irrespective of distance)—		
On goods charged at maundage rates .	6 pies per maund on actual weight.	6 pies per maund on actual weight.
(*b*) On goods charged at wagon rates . .	Rs. 4 per 4-wheeled wagon and Rs. 8 per bogie wagon.	Rs. 4 per 4-wheeled wagon and Rs. 8 per bogie wagon.
II. Short distance charge, in addition to charges given in (I) above on traffic carried for distances under 75 miles, subject to the differential rule—		
(*a*) On goods charged at maundage rates .	3 pies per maund on actual weight.	No charge.
(*b*) On goods charged at wagon rates . .	Rs. 2 per wagon.	No charge.

Bones in wagon loads at maundage rates are subject to the charges under (I) (*b*) and (II) (*b*), instead of (I) (*a*) and (II) (*a*).

3. On goods booked from stations on the Hardwar-Dehra Railway to station on the Oudh and Rohilkhand Railway (but not beyond, *i.e.*, not to foreign Railways) and *vice versâ*, only one terminal will be charged and that will be credited to the railway which books the traffic ; but the short distance charge if due, will be levied separately in addition to the terminal charge and will be credited solely to the Oudh and Rohilkhand Railway.

4. The following reduced terminals, irrespective of distance, will be charged, on the articles noted below, when booked in wagon loads :—

Bricks, chakees, stone, lime, limestone, marble unwrought, stone of other kinds (not otherwise specified in the tariff), timber of all sorts, slates.

Marked carrying capacity of the wagon.	Over O. & R. Ry.	Over H.-D. Ry.
	Per wagon.	Per wagon.
	Rs. A. P.	Rs. A. P.
Not exceeding 11 tons	2 0 0	2 0 0
Exceeding 11 tons but not exceeding 17 tons . . .	3 0 0	3 0 0
Four-wheeled wagons exceeding 17 tons	4 0 0	4 0 0
Bogie wagons	8 0 0	8 0 0

In booking from stations on the Hardwar-Dehra Railway to stations on the Oudh and Rohilkhand Railway or *vice versâ*, only one terminal will be charged and will be divided between the Oudh and Rohilkhand Railway and Hardwar-Dehra Railway in equal proportions.

Oudh and Rohilkhand Railway short distance charge will not be levied in addition to the terminals, laid down in this sub-paragraph.

No terminal and short distance charges will be levied on consignments of bhoosa, bunkhas, firewood, fodder, forage, grass, hay, kirby, sirkee and straw, if the freight charges at the mileage rate is Rs. 10 and over per wagon. If the freight amounts to less than Rs. 10, the following terminal charge will be added, subject to the operation of the differential rule :—

Type of stock used.	Terminal charge. Per wagon.
	Rs. A. P.
A, B, C, D and E.	2 0 0
F, G, H. and P	3 0 0

The terminal charge when levied on a consignment booked over the Hardwar-Dehra and Oudh and Rohilkhand Railways will be divided between the two Railways in equal proportions.

Exceptions.

5. No terminals and short distance charges will be levied in the following cases :—

(1) Goods carried at local or through 'station to station' lump sum special rates.

(2) Goods carried at the 'Reduced class rates'.

(3) Cross traffic of the Oudh and Rohilkhand Railway.

(4) Military traffic carried at military rates, coal, and railway materials.

(5) Sugar booked from Unao to Cawnpore (Oudh and Rohilkhand Railway).

(6) All traffic booked from and to Kashi and Benares Cantonment to and from Mogal Sarai and *viâ*.

(7) All traffic between Shiupur and *viâ* Moghal Sarai.

(8) Jaggree, at owner's risk, from Meerut City Mandi to Aligarh *viâ* Meerut City over Oudh and Rohilkhand Railway.

(9) Kunkur, boulders, sand and stone or brick ballast. In case of consignments booked in wagon loads, charge will, however, be made, subject to a minimum charge of Rs. 4 per vehicle.

(10) All first class goods booked to and from Sambhal Hatim Sarai and Phul Singh Sirsi, whether charged at the classified rate or at schedule rate.

(11) Grain and pulses and common seeds, booked from the following stations to Cawnpore (Oudh and Rohilkhand Railway) :—

Achalganj.
Bighanur.
Takia.
Purwa Road.
Raghuraj Singh.
Dalmau.
Lalganj.
Jalalpur Dhai.
Jamnapur
Belakhera.
Lachhmanpur.
Unchahar.
Pariawan.
Gotni
Atanagar.
Bhadri.
Lalgopalganj.
Ramchaura Road.
Atiampur.

(12) Bamboos, in wagon loads.

(13) Sugar cane, in wagon loads.

(14) Kuppas booked from Hapur and *viâ* to Meerut City and *viâ* Meerut City for Meerut City Mandi.

(15) The following articles booked :—

(*a*) Locally between stations on the Oudh and Rohilkhand Railway.

(*b*) Locally between stations on the Hardwar-Dehra Railway.

(*c*) From the Oudh and Rohilkhand Railway stations to Hardwar-Dehra and Cawnpore-Khairada Railway stations and *vice versâ* (but not when booked to and from foreign railways).

Ashes.
Bamboo.
Bark, tanning
Bran.
Cinders.
Earth (all sorts).
Gunny.
Hay, pressed
Hemp, pressed
Iron ore.
Iron or steel scrap.
Iron slag.
Jute, pressed
Lac, refuse.
Lac, stick.
Moonj, pressed.
Potatoes, at owner's risk.
Salt (all sorts).
Saltpetre.
Sugar-cane, in wagon loads.

N.B.—North Western Railway Meerut City Mandi should be considered as a local station of the Oudh and Rohilkhand Railway for purposes of this para.

6. The terminal charge of 6 pies per maund mentioned above is not leviable in the following cases; but the short distance charge of 3 pies per maund will be levied.

(*a*) Grain and pulses and common seeds, salt, and kerosine oil flashing at and above 76° Fahr. at owner's risk, booked from Benares Cantonment and Kashi to Lohta.

(*b*) **Sawdust in wagon loads, from *viâ* Cawnpore (Oudh and Rohilkhand Railway) to Lucknow, only when booked from Jhansi.**

(*c*) Grain and pulses and common seeds, booked from Lalgopalganj to Allahabad.

7. The terminal charge on goods charged at wagon rates is not leviable on cinders and ashes, at owner's risk, in wagon loads, loaded and unloaded by owners, booked from Khan Alampura to *viâ* Saharanpur for Meerut City. The short distance charge of Rs. 2 per wagon will, however, be levied.

The following additional charges will be made on cross traffic of all descriptions of goods (except bone, coal and railway materials and stores), from or to metre gauge lines, passing Bareilly, Barabanki, Shahganj, Jaunpur City, Benares Cantonment, Lucknow or Moradabad Junctions :—

Description of goods.	Articles charged at maund rates.	Articles charged at wagon rates.
	Per maund Pies	Per wagon Rs. A. P.
(*a*) Goods carried 75 miles or less over the Oudh and Rohilkhand Railway.	3	2 0 0
(*b*) Goods carried over 75 miles over the Oudh and Rohilkhand Railway.		
Goods placed over the Oudh and Rohilkhand Railway—		
In class I	1	0 11 0
" II and III	2	1 5 0
" IV & V	3	2 0 0
" X	5	3 5 0

The above charge is not leviable on traffic to and from Badshahnagar and North-Western Railway Meerut City Mandi.

East Indian Railway.

——	To Howrah.	To and from other than Howrah when carried under 75 miles.	When carried 75 miles and over.
(*a*) Grain and pulses, seeds common, salt, ballast.	*Nil.*	3 pies per maund subject to differential rule.	*Nil.*
(*b*) Mineral class goods . . .	2 pies per maund.	3 pies per maund subject to differential rule.	*Nil.*

East Indian Railway—contd.

—	To Howrah.	To and from other than Howrah when carried under 75 miles.	When carried 75 miles and over.
(*c*) Old special class goods . .	5 pies per maund.	5 pies per maund subject to differential rule.	3 pies per maund.
(*d*) All other goods . .	8 pies per maund.	9 pies per maund subject to differential rule.	6 pies per maund.
(*e*) All goods chargeable at wagon mile rate.	Rs. 4	Rs. 4 per wagon subject to differential rule.	Rs. 2 per wagon.
(*f*) Railway materials and stores. .	2 pies per maund to and from Howrah locally.	*Nil.*	*Nil.*

For articles mentioned in (*a*), (*b*), (*c*), when booked between the following points special terminals are levied, *viz.*:—

	Pies per maund.
When carried under 75 miles	9 (subject to differential rule).
When carried 75 miles and over	6

Cawnpore and *viâ* and	Stations situated between Manauri and Firozabad both inclusive excluding Shikohabad-Farrukhabad Railway stations.
Jubbulpur and *viâ* and	(*a*) Stations on the Jubbulpore line. (*b*) Stations between Gaipura and Kunwar both inclusive, excluding *viâ* Allahabad and *viâ* Allahabad City.
Katni and *viâ* and	(*a*) Stations on the Jubbulpur line. (*b*) Stations situated between Joonathpur and Kunwar both inclusive excluding *viâ* Allahabad and *viâ* Allahabad City.
Jamuna Bridge and *viâ* Agra East Bank and	(*a*) Stations situated between Etawah and Kuberpur both inclusive. (*b*) Stations on the Shikohabad-Farrukhabad Railway. (*c*) Stations situated between Barhan and Khurja both inclusive but excluding Hathras junction and *viâ* Aligarh. (*d*) Stations on the Khurja Hapur Railway excluding *viâ* Hapur.
Farrukhabad and *viâ* and . . .	Stations on the Shikohabad-Farrukhabad Railway including Shikohabad itself.
Hathras junction and *viâ* and. .	(*a*) Stations situated between Barhan and Khurja both inclusive excluding *viâ* Aligarh. (*b*) Stations on the Khurja Hapur Railway excluding *viâ* Hapur.

Hapur and *viâ* and	**Stations on the Khurja Hapur Railway including Khurja itself.**
Manikpur and *viâ* and . . .	**(*a*) Stations on the Jubbulpore Line.** **(*b*) Stations situated between Gaipura and Kunwar both inclusive, excluding *viâ* Allahabad and *viâ* Allahabad City.**
Delhi, *viâ* Delhi and *viâ* Delhi Serai Rohilla in through booking with the Agra-Delhi Cord, S. P. B., and Bombay, Baroda and Central India Railway and	(*a*) Stations situated between Madrak and Delhi Shahdara both inclusive excluding Aligarh and *viâ* Ghaziabad. (*b*) Stations on the Khurja Hapur Railway excluding *viâ* Hapur.

No terminals are leviable on cross traffic but a charge of 3 pies per maund is made on cross traffic where there is a break of gauge.

Bengal Nagpur Railway, proper.

(*a*) *Local traffic.*—Upon all consignments of 1st, 2nd, 3rd, 4th, 5th and explosive or X class goods, a terminal charge of 16 pies per maund is added to the mileage rates.

(*b*) *Through traffic.*—Upon all consignments of 1st, 2nd, 3rd, 4th, 5th and explosive or X class goods, a terminal of 8 pies per maund is added to the mileage rates.

(*c*) *Short Distance terminal.*—Unless otherwise specified, a terminal charge of 3 pies per maund is made on all goods carried at schedule rates and on which no other terminals are levied when carried over the Bengal Nagpur Railway proper for distances under 75 miles, in local as well as in through booking except in the following cases :—

(1) Coal, coke and patent fuel.
(2) Railway materials and stores.

(*d*) *Special terminal charge on goods consigned to or from Shalimar.*—A special terminal charge of 2 pies per maund is made, except where otherwise specified, on all goods charged at station to station and maund schedule rates (including E. C. schedule rates) when booked to or from Shalimar ; when goods are booked at wagon schedule rates, the terminal charge is Rs. 3-0-0 per wagon irrespective of the actual weight in the wagon.

The Shalimar special terminal charge in case of articles charged at ton rates is Rs. 0-4-6 per ton.

Exceptions.—The above terminal is not levied in the following cases :—

(1) Coal, coke and patent fuel.
(2) Hides and skins booked to Shalimar and charged at the minimum wagon rates of 4 or 3 annas per mile.
(3) Live stock.
(4) Myrabolams crushed or with seed extracted.
(5) Railway materials and stores.
(6) On traffic booked *viâ* Shalimar.

(7) On traffic booked to or from Shalimar, from or to the following stations :—

- (*a*) All stations Asansol and *viâ* to Barahabhum.
- (*b*) All stations on the Purulia Lohardaga Branch.
- (*c*) All stations Kargali to Gomoh and *viâ* on the Talgaria Chord including stations on Bhojudih-Mohuda loop and stations on the Bokaro Ramgarh Extension.
- (*d*) Murulia and Chaurashi.
- (*e*) All stations Adra to Jhantipahari.
- (*f*) *Viâ* Katni and Katni Marwara and *viâ*.
- (*g*) *Viâ* Jubbulpur (*viâ* Gondia).
- (*h*) Howbagh-Jubbulpur (*viâ* Gondia).
- (*i*) Nagpur and *viâ*.

Garden Reach Terminals.

1. On goods booked to Garden Reach (Calcutta) the following terminals are charged :—

	Pies per maund.
Goods carried at maund rates	6
	Per wagon. Rs. A. P.
„ „ wagon rates	9 6 0
Exceptions :—	Per ton. Rs. A. P.
(*i*) Lime and limestone to Garden Reach	0 7 0
(*ii*) Stones, N. O. C., ballast ghooting unburnt, gravel, kunkur, moorum, sand and sandstone booked to Garden Reach (Calcutta)	0 7 0
(*iii*) Firewood booked in wagon loads to Garden Reach (Calcutta)	Per wagon. 4 11 0

2. The following are exempted from Garden Reach terminal :—

- (*a*) Lime from Bisra.
- (*b*) Live stock.
- (*c*) Charcoal booked from distances of 90 miles and over.
- (*d*) Firewood booked in wagon loads at owner's risk from Krishna-Chandrapur.
- (*e*) Railway materials and stores (excluding coal, coke and patent fuel, rolling stock, dangerous goods, specie and bullion) for the use of the Bengal Nagpur Railway and booked from Garden Reach to Shalimar and to stations on the Bengal Nagpur Railway.

Terminals over the East Coast Section.

1. The terminals on all goods, charged at maund rates, whether class or schedule, and irrespective of distance and weight are :—

	Pies per maund.
In through booking	2
In local	4, *i.e.*, 2 pies per maund at both the forwarding and receivin ends.

2. In the case of goods charged at wagon mile rates the terminals irrespective of distance are :—

	Per wagon. Rs. A. P.
Goods charged at wagon mile rates under schedule K.—	
In through booking	1 4 0
In local booking	2 8 0

Bengal and North-Western Railway.—Terminal charges.

(*a*) On the Bengal and North-Western Railway a terminal charge of 3 pies per maund is made in the case of the five ordinary and X classes.

(*b*) A terminal charge of 6 pies per maund is levied on all goods booked to or from Aishbagh, and *viâ* Daliganj and *viâ* and Cawnpore and *viâ* from or to stations on the link including Cawnpore (Collectorganj).

(*c*) A terminal charge of 3 pies per maund will be levied on goods charged at the special rates A to G in local booking over the Bengal and North-Western Railway for distances under 75 miles, subject to the differential rule, *i.e.*, the charge for distances under 75 miles must not exceed the charge for 75 miles without terminals; this does not apply to mineral class goods.

(*d*) A terminal of 6 pies per maund will be levied on grain and seeds and jaggree and mollases at owner's risk and sugar from Jaunpur to Benares City and Benares Cantonment, and *vice versâ*.

(*e*) A terminal charge of 3 pies per maund will be levied on stone in full wagon loads at owner's risk when booked from Benares City to Jaunpur locally.

(*f*) A terminal charge of 6 pies per maund will be levied on all goods when booked from Cawnpore (Collectorganj) to Aishbagh, Lucknow City, Daliganj and Badshahnagar and *vice versâ*.

(*g*) The following terminal charges on goods charged at wagon rates as also on mineral class goods, timber and firewood, which are in force over the Oudh and Rohilkhand Railway are levied on goods booked to and from stations (*viz.*, Burhwal, Bindaura, Jahangirabad, Barabanki, Jugaur, Malhaur, Lucknow Junction, Amausi, Harauni, Jaitipur, Ajgain, Sonik, Unao, Magarwara, Cawnpore (Oudh and Rohilkhand Railway), Cawnpore (Collectorganj), Chingigurh and Gwaltoli siding) to and from stations (*viz.*, Lucknow City, Aishbagh and *viâ*, Daliganj and *viâ*, and Badshahnagar) and *vice versâ* :—

	Per wagon. Rs. A. P.
(1) On goods charged at wagon rates for distances under 75 miles	**2 0 0**
(2) On the articles noted below when booked in wagon loads (irrespective of distance) for 4-wheeled wagon . .	**2 0 0**
On the articles noted below when booked in wagon loads (irrespective of distance) for 6-wheeled or bogie wagon .	**3 0 0**

***Articles* :—**

Kunkur, ballast, lime, stone, stone mills, stone, N. O. C., timber of all sorts, slates and firewood.

A terminal charge of Rs. 4 per 4-wheeled wagon in addition to the charge of Rs. 2 per wagon laid down above will be levied from stations Lucknow, Aishbagh and *viâ*, Daliganj and *viâ*, and Badshahnagar and *vice versâ* to stations on the Link. This charge will also be levied on lump sum rates for bark for tanning, charcoal, firewood, timber unwrought and kunkur.

Madras and Southern Mahratta Railway.—Terminal charges.

(*a*) Terminal charges on goods charged at maund rates:—

(*i*) *In local booking.*—On traffic booked between any two stations throughout the system, 6 pies per maund, *i.e.*, 3 pies at each end. But in the case of articles charged at maund schedules M and N, a terminal charge of Rs. 1-8-0 for each metre gauge 4-wheeled wagon and Rs. 3 for each broad gauge 4-wheeled wagon used is levied.

(*ii*) *In through booking.*—In through booking with foreign railways to or from any station on the Madras and Southern Mahratta Railway system, 3 pies per maund for the forwarding or receiving station, as the traffic may be outward or inward, respectively.

(*b*) Terminal charges on goods charged at wagon rates:—

In local booking as well as in through booking with foreign railways Rs. 1-8-0 for each metre gauge 4-wheeled wagon, and Rs. 3 for each broad gauge 4-wheeled wagon used. In the case of wagon schedule K rates the terminal charges to be levied is Rs. 1-4-0.

(*c*) Terminal charges on cross traffic:—

Terminal charges are not made on cross traffic.

(*d*) Terminal and short distance charges to and from Kolar Gold Fields and Sangli State Railways:—

Traffic to and from Kolar Gold Fields Railway and the Sangli State Railway is treated as foreign traffic for purposes of charging terminal and short distance charges.

(*e*) Terminal charges on goods booked to and from the out-agencies:—

On goods booked to or from the out-agencies on the Madras and Southern Mahratta Railway system, the same terminals as may be applicable to traffic to and from the railway stations serving the out-agencies are levied.

(*f*) Exemption from terminal charges:—

(*i*) Coal and coke are exempted from the terminal charges over the whole of the Madras and Southern Mahratta Railway system except in booking locally from Madras to any station on the Madras and Southern Mahratta Railway, but in the case of traffic booked locally between Madras Harbour and other stations in Madras, *viz.*, Salt Cotaurs, Rayapuram and Korukkuppettai, only one terminal, *viz.*, 3 pies per maund is levied in addition to the freight charges ordinarily charged.

(*ii*) Firewood in wagon loads booked locally for distances under 250 miles is not subject to terminal charges. *This rule applies also over the Kolar Gold Fields Railway locally and in booking with the Madras and Southern Mahratta Railway.*

Short distance charges.

On all goods traffic (live stock excepted) booked and carried for distances under 75 miles (subject to differential rule) over the Madras and Southern Mahratta Railway (with the exceptions noted below) a short distance charge of 3 pies per maund in the case of goods chargeable at Maund Rates except where otherwise stated, and of Rs. 2 per 4-wheeled metre gauge wagon and Rs. 4 per 4-wheeled broad gauge wagon in the case of goods chargeable at wagon rates is levied in addition to the ordinary mileage rates and terminals both in local booking and in through booking with foreign railways. In local booking, however, the wagon short distance charges referred to above are levied in the case of articles charged at maund schedules M and N only.

Exceptions.

(*i*) In booking locally between any two stations on the North East line (including Tenali-Repalle and Cocanada branches).

(*ii*) In the case of traffic booked to and from the stations on the West of India Portuguese, the Kolar Gold Fields, and the Sangli State Railways no short distance charge is leviable on these railways, but when the distance such traffic is carried over the Madras and Southern Maharatta Railway is less than 75 miles, the short distance charge laid down above is levied for the Madras and Southern Mahratta Railway only. No short distance charge is levied on traffic from Kolar Gold Fields Railway to South Indian Railway and *vice versâ, viâ* Jalarpet.

(*iii*) The short distance charge is not levied on cross traffic nor is it added to the special station to station rates quoted in local and through booking.

(*iv*) The short distance charge is not levied in the following cases :—

(*a*) Coal.

(*b*) Kerosine oil in bulk originally received at Bangalore, Guntakal, Bezwada or Tadepalli, Katpadi, Gudur and Renigunta booked locally from Madras or Cocanada Port in broad gauge wagons and transferred at these junctions to metre gauge tank wagons and rebooked thence locally to metre gauge stations on this line situated under 75 miles, at ordinary class rates at owner's risk.

(*c*) Live stock.

Transhipment charge on coal.

A transhipment charge of one pie per maund (or annas 2-3 per ton) is levied for the Madras and Southern Mahratta Railway on all coal, coke and patent fuel booked *viâ* Hotgi and *viâ* Poona.

Terminal and other extra charges in the case of special lump sum rates.

All special lump sum maund and wagon rates, quoted from and to particular stations in Madras and Southern Mahratta Railway Goods Tariff, Part I, are inclusive of terminal and other extra charges, but where a maund mile or wagon mile rate is quoted, the terminal and other extra charges are to be levied in addition, unless it is specially noted that such charges are not to be made. *Terminal and other extra charges are levied on the same weight of goods on which freight charges are collected.*

South Indian Railway.—Terminal charges.

In local booking :—

4 pies per maund for forwarding station . .	Total 8 pies per maund
4 pies per maund for receiving station . . .	

In through booking :

4 pies per maund for forwarding or receiving station as the case may be.

The terminal charge is levied on the same weight as that on which freight is charged, except where otherwise specified.

Terminals are not charged on cross traffic.

On grain and seeds, common, consigned locally over the metre gauge section, excluding Tirupattur-Krishnagiri, Morappur-Hosur and Shoranur-Cochin Railways, for distance not exceeding 50 miles, the following terminal charges will be levied :—

	Per maund.	
	At O. R.	At R. R.
	Rs. A. P.	Rs. A. P.
To certain Coast Port Stations :—		
For distances 1 to 25 miles . .	0 0 3	0 0 8
„ „ 26 to 50 „ . .	0 0 5	0 0 8
To stations other than Coast Ports :—		
For distances 1 to 50 miles . . .	0 0 3	0 0 8

The following commodity is exempt from terminals on the metre gauge section, excluding Tirupattur-Krishnagiri, Morappur-Hosur and Shoranur-Cochin Railways, when booked at the class rate in small consignments, or at special rates in wagon loads :—

Commodity	From	To
Salt	Cuddalore O. T. and Beach	Chidambaram, Porto-Novo, Panruti, Tirukoilur.
Bricks in wagon loads	Pallavaram . St. Thomas Mount	Madras (Beach) for the Harbour Works.
	Perambair . .	Pondicherry, Madras (Egmore and Beach).
Firewood in H. S. trucks . . .	Olakur . . .	Pondicherry.
Quarry rubbish in wagon loads O. R. .	Pallavaram . .	Madras (Egmore and Beach).

The following commodities are exempted from terminals on the broad gauge section, including Shoranur-Cochin, Tirupattur-Krishnagiri and Morappur-Hosur Railways, when consigned in full wagon loads, subject to the following minimum weights per broad gauge wagon :—

	Maunds.
(*a*) Firewood for distance under 25 miles and over 81 miles .	216
(*b*) Firewood between the following stations	216

From	To
Chalakudi	Ernakulam.
Irinjalakuda	
Pudukad	
Ollur	
Trichur	
Kasaragod	Mangalore.
Kanhangad	
Nileshwar	
Azhikkal	
Azhikkal	Calicut.

(*c*) Cotton loose, from Ingur to Coimbatore and from Coimbatore to Kallayi	90

A terminal charge of Rs. 3 per broad gauge wagon, charged at double the Schedule P, P-1, and P-2 rates for distances 25 miles and over up to 81 miles on the broad gauge section, except for traffic between the stations mentioned in clause (*b*) above, is to be levied extra.

Terminals on re-booked traffic.

In the case of re-booked traffic full terminals must be charged whether booked at O. R. or R. R.

When goods which are exempted from, or subject to, reduced terminals are re-booked to stations not exceeding 50 miles to avail of a cheaper rate by re-booking, a remark to that effect should be made on the re-booked invoices so that full terminals may be levied in such consignments.

Short distance charge.—A short distance charge of 3 pies per maund may be levied on all goods carried for distances under 75 miles over this railway in addition to the terminal charge.

A short distance charge of 3 pies per maund will be levied on groundnuts from Kannammangalam, Kaniyambadi and Vellore Cantonment to *viâ* Katpadi (for traffic to Madras) and from Palur to *viâ* Arkonam (for traffic to Madras).

Eastern Bengal Railway.—Terminal charges.

1. Eastern Section :—

At—	Pies.
Calcutta or Chitpore (in upward booking only)	3
Lalgola Ghat	2
Kushtia	2
Goalando	2
Chitpore Ghat	1
Faridpur	2

2. (*a*) Northern and Behar Sections, including Katihar-Goadgari and Gauhati Extensions :—

At—	Pies.
Godagari	2
Manihari Ghat	3
Sara Ghat	2
Dhubri Ghat. In addition to this a ghat charge of 2 annas per maund is levied	2
(*Amingaon.* In addition to this a ghat charge of 1 anna per maund is levied in through booking with the Assam Steamer Service *viâ* Amingaon. In local booking from Amingaon to Chutiapara Baihata, Rangiya and Nalbari and *vice versâ* a terminal charge of 6 pies per maund is levied in addition to the 2 pies charge quoted above)	2
Gauhati	3
All other stations	1

(*b*) In through booking *viâ* Manihari Ghat :—

At—	Pies.
Manihari Ghat	3
All other stations on the Northern and Behar sections including Katihar-Godagari and Gauhati Extensions	3

(*c*) In through booking *viâ* Fulchari and Bahadurabad :—

At—	Pies.
Fulchhari	2
Bahadurabad	2

3. Mymensingh Jagannathganj Railway and Dacca section including the Singhjani-Fulchari Extension :—

(*a*) Except in through booking with Calcutta steamer ghat by the direct steamer service *viâ* Sunderbans :—

	As.	P.
(1) Between any two stations on the Dacca Section (except Narayanganj and *viâ*)	0	3
(2) Between any two stations on the Singhjani Fulchari Extension and *viâ*	0	3
(3) Between any two stations on the Mymensingh Jagannathganj Railway (except Jagannathganj) and *viâ*	0	3
(4) Between any station on the Dacca section (except Narayanganj) and *viâ*, and any station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and *viâ*, or any station on the Singhjani Fulchari Extension and *viâ*	0	6

	As.	P.
(5) Between any station on the Singhjani Fulchari Extension and *viâ* and any station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and *viâ*	**0**	**6**
(6) Between Narayanganj (not *viâ* Narayanganj) and any other station on the Dacca section and *viâ*	**0**	**9**
(7) Between Narayanganj (not *viâ* Narayanganj) and any Station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and *viâ* or any other station on the Singhjani Fulchari Extension and *viâ*	**1**	**0**
(8) Between Narayanganj (not *viâ* Narayanganj) and Jagannathganj (not *viâ* Jagannathganj)	2	0
(9) Between *viâ* Narayanganj and any station on the Dacca section and *viâ*	0	3
(10) Between *viâ* Narayanganj and any station on the Mymensingh Jagannathganj railway (except Jagannathganj) and *viâ*, or any station on the Singhjani Fulchari extension and *viâ*	0	6
(11) Between *viâ* Narayanganj and Jagannathganj (not *viâ* Jagannathganj)	1	6
(12) Between Jagannathganj (not *viâ* Jagannathganj) and any other station on the Mymensingh Jagannathganj railway and *viâ*	1	0
(13) Between Jagannathganj (not *viâ* Jagannathganj) and any station on the Dacca section and *viâ* (except Narayanganj and *viâ*) or any station on the Singhjani Fulchari extension and *viâ*	1	0
(14) Between *viâ* Jagannathganj and any other station on the Mymensingh Jagannathganj railway and *viâ*	0	3
(15) Between *viâ* Jagannathganj and any station on the Dacca section (except Narayanganj) and *viâ*, or any station on the Singhjani Fulchari extension and *viâ*	0	6
(16) Between *viâ* Jagannathganj and Narayanganj	1	0

(*b*) In through booking with Calcutta Steamer Ghats by the Direct Steamer Service *viâ* Sunderbans :—

	As.	P
(1) Between *viâ* Narayanganj and any station on the Dacca Section, Mymensingh-Jagannathganj railway (except Jagannathganj) and Singhjani Fulchari Extension	1	0
(2) Between *viâ* Jagannathganj and any station on the Mymensingh Jagannathganj Railway or any station on the Dacca section on the Singhjani Fulchari Extension	1	0
(3) Between *viâ* Narayanganj and Jagannathganj	1	0
(4) Between Narayanganj and *viâ* Jagannathganj	2	0

4. Southern Section :—

At—	Pies.
Calcutta (Sealdah) or Chitpore	1
Mogra Hat	1
Netra	1
Deula	1
Basuldunga	1
Kalighat (outward)	1
Do. (inward)	4
Akra	1
Budge Budge	1

	Pies.
Sangrampur	1
Santoshpur	1
viâ Dock Junctions for through booking with Bengal Nagpur Railway and connected railways	4
viâ Dock Junction for articles chargeable at wagon mile rate in through booking with Bengal Nagpur and connected railways. This terminal charge will be levied on actual weight of the consignment	1
viâ Dock Junction for traffic booked between Kidderpore Docks and stations on the Southern Section	3

5. Central Section :—

On 1st, 2nd, 3rd and 4th class goods—2 pies at forwarding and 2 pies at receiving station :—

Viâ Calcutta and Chitpore	2 pies at one end only.
Viâ Dum Dum Junction	
Viâ Ranaghat	
Viâ Khoolna	

On 5th and X class goods—4 pies at forwarding and 4 pies at receiving station.—

Viâ Calcutta and Chitpore	4 pies at one end only.
Viâ Dum Dum Junction	
Viâ Ranaghat	
Viâ Khoolna	

6. List of articles on which special terminal charges are leviable.

(1) Fodder and forage not being military traffic :—

	Pies.
At Calcutta in upward booking	3
Do downward booking	1½
At any other points	2

(2) Food grains, seeds and pulses, carried at special reduced or owner's risk rates on the Eastern Section :—

	Pies.
Between any two stations on the Eastern Section	3
Exceptions.—When booked through to or from stations on the Northern and Behar sections, including Katihar Godagari and Gauhati Extensions *viâ* Bhairamara or Lalgola Ghat	4

(3) Jute over Dacca Section, Mymensingh Jagannathganj railway and Singhjani Fulchari Extension :—

In local booking between any two stations on each of the above sections, in booking between one section and another and in through booking with Calcutta steamer ghats by the Direct Steamer Service *viâ* Sunderbans	6

(4) Salt carried at owner's risk rates :—

Between any two stations on the Eastern and Central Sections only	3

7. The following articles are exempted from terminal charge :—

Coal, coke and patent fuel, Railway materials and stores.

8. The terminal charges are levied on the same weight as that on which freight is levied.

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